GeoVision inc
The Vision of Security

GV-Hybrid LPR Camera 20R/ 10R / GV-IP LPR Camera 5R / GV-LPC1100

User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

LPRCAMV101-B

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Preface

Welcome to the *GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC 1100 User's Manual*.

The GV-IP LPR Camera has a series of models designed to meet different needs. This manual is designed for the following models and firmware versions:

Models	Firmware Version
GV-Hybrid LPR Camera 20R	1.02
GV-Hybrid LPR Camera 10R	1.02
GV-IP LPR Camera 5R	1.01
GV-LPC1100	1.01

Note: GV-LPC1100 is also referred to GV-IP LPR Camera 10R.

Contents

Naming Definition v
Options v
Note for Connecting to GV-System / GV-VMS vi
Note for Installing Camera Outdoor vii
Note for Adjusting GV-Hybrid LPR Camera 20R viii
Chapter 1 Introduction 1
1.1 GV-Hybrid LPR Camera 20R / 10R 1
1.1.1 Features 2
1.1.2 System Requirements 3
1.1.3 Packing List 4
1.1.4 Camera Overview 5
1.1.5 Device Installation 6
1.1.6 Connecting the Camera 10
1.2 GV-IP LPR Camera 5R 14
1.2.1 Features 15
1.2.2 System Requirements 16
1.2.3 Packing List 17
1.2.3 Packing List 17
1.2.4 Device Installation 18
1.2.5 Connecting the Camera 19
1.2.6 Adjusting the Angles 20
1.2.7 Replacing the Silica Gel Bag 23
1.2.8 Installing the Sun-Shield Cover 24
1.3 GV-LPC1100 25
1.3.1 Features 26
1.3.2 System Requirements 27
1.3.2 System Requirements 27
1.3.3 Packing List 28
1.3.3 Packing List 28
1.3.4 Device Installation 29
1.3.5 Connecting the Camera 31
1.3.6 Replacing the Silica Gel Bag 34
Chapter 2 Getting Started 36
2.1 Looking Up the IP Address 36
2.2 Accessing Your Surveillance Images 39

2.3 Configuring the Basics 40
Chapter 3 Guest Mode and Live View Panel 41
3.1 The Live View Window 42
3.2 The Control Panel of the Live View Window 44
3.3 Snapshot of a Live Video 47
3.4 Video Recording 47
3.5 Picture-in-Picture and Picture-and-Picture View 48
3.6 Alarm Notification 50
3.7 Video and Audio Configuration 52
3.8 Remote Configuration 53
3.9 Camera Name Display 53
3.10 Image Enhancement 53
Chapter 4 Administrator Mode 54
4.1 Video & Motion 56
4.1.1 Video Settings 57
4.1.2 Motion Detection 61
4.1.3 Privacy Mask 62
4.1.4 Text Overlay 63
4.1.5 Tampering Alarm 64
4.2 Events & Alerts 65
4.2.1 E-mail 66
4.2.2 FTP 68
4.2.3 Center V2 70
4.2.4 Vital Sign Monitor 72
4.2.5 GV-Video Gateway / GV-Recording Server 74
4.2.6 RTSP 76
4.3 Monitoring 77
4.3.1 GV-Hybrid LPR Camera 20R / 10R 77
4.3.2 Monitoring Settings 78
4.4 Network 78
4.4.1 LAN Configuration 79
4.4.2 Advanced TCP/IP 81
4.4.3 IP Filtering 85
4.4.4 SNMP Settings 86
4.5 Management 88
4.5.1 Date and Time Settings 88
4.5.2 User Account 90
4.5.3 Log Information 91

4.5.4 Tools 92
4.5.5 Language 94
Chapter 5 Advanced Applications 95
5.1 Upgrading System Firmware 95
5.1.1 Using the Web Interface 96
5.1.2 Using the GV-IP Device Utility 97
5.2 Backing Up and Restoring Settings 100
5.3 Restoring to Factory Default Settings 102
5.3.1 Using the Web Interface 102
5.3.2 Directly on the Camera 102
5.4 Verifying Watermark 103
5.4.1 Accessing AVI Files 103
5.4.2 Running Watermark Proof 103
5.4.3 The Watermark Proof Window 104
Chapter 6 DVR Configurations 105
6.1 Setting Up IP Cameras on GV-System 107
6.1.1 Customizing Camera Settings 110
6.2 Setting Up IP Cameras on GV-VMS 112
6.3 Remote Monitoring with Multi View 115
6.4 Remote Monitoring with E-Map 117
Chapter 7 CMS Configurations 119
7.1 Center V2 119
7.2 Vital Sign Monitor 122
7.3 Dispatch Server 123
Chapter 8 Smart Device Connection 125
Specifications 126
GV-Hybrid LPR Camera 20R / 10R 126
GV-IP LPR Camera 5R 130
GV-LPC1100 133
Appendix 137
A. The CGI Command 137
B. RTSP Protocol Support 138
C. Settings for Internet Explorer 8 or later 139

Naming Definition

GV-System	GeoVision Analog and Digital Video Recording Software. The GV-System also refers to **Multicam System**, **GV-NVR System**, **GV-DVR System** and **GV-Hybrid DVR System** at the same time.
GV-VMS	GeoVision Video Management System for IP cameras.

Options

Optional devices can expand your camera's capabilities and versatility. Contact your dealer for more information.

Device	Description
GV-PA191 PoE Adapter	The GV-PA191 PoE adapter is designed to provide power and network connection to the cameras over a single Ethernet cable. The GV-PA191 PoE adapter is only available for GV-IP LPR Camera 5R.
GV-PA481 PoE Adapter	The GV-PA481 PoE adapter is designed to provide power to the IP device through a single Ethernet cable. The GV-PA481 adapter is only available for the GV-Hybrid LPR Camera 10R / 20R.
GV-PA482 PoE Adapter	The GV-PA 482 PoE adapter is designed to provide power and network connection to the cameras over a single Ethernet cable. The GV-PA482 PoE adapter is only available for GV-LPC1100.
GV-PoE Switch	The GV-POE Switch can be used for data transmission only. It does not provide power to GV-IP LPR cameras and GV-Hybrid LPR cameras.

Note for Connecting to GV-System / GV-VMS

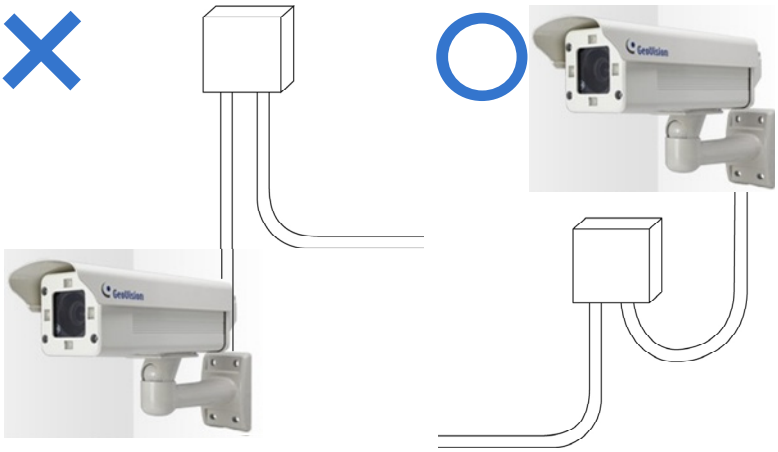
The GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 is designed to work with and record on GV-System / GV-VMS, a video management system.

Once the camera is connected to the GV-System / GV-VMS, the resolution set on the GV-System / GV-VMS will override the resolution set on the camera's Web interface. You can only change the resolution settings through the Web interface when the connection to the GV-System / GV-VMS is interrupted.

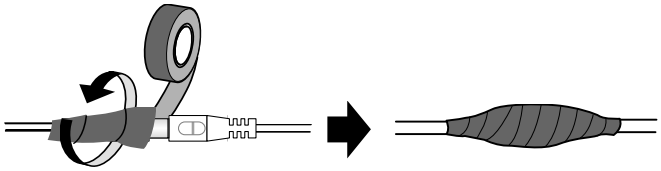
Note for Installing Camera Outdoor

When installing the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 outdoor, mind the following:

1. Set the camera above the junction box to prevent water from entering the camera along the cables.



2. Waterproof the PoE, power and TV-out cables with waterproof silicon rubber or the like.



3. To prevent the lens from fogging up, replace the silica gel bag every time you open the camera, and conceal the gel bag in camera within 2 minutes of exposing to open air. The silica gel bag loses it effectiveness when the dry camera is opened.
4. For each newly replaced silica gel bag, allow it to absorb moisture for at least 5 hours before operating the camera.
5. The camera casing can be hot due to its IR LED. Make sure you unplug the power cable and allow the camera casing to cool down before handling the camera.

Note for Adjusting GV-Hybrid LPR Camera 20R

During the operation of the GV-Hybrid LPR Camera 20R, the external IR Illuminator is at the high temperature of up to 50°C (122°F). When adjusting the camera angle or reinstalling the camera, avoid touching the surface of the external IR Illuminator.

Chapter 1 Introduction

1.1 GV-Hybrid LPR Camera 20R / 10R

GV-Hybrid LPR Camera 20R

GV-Hybrid LPR Camera 10R

The GV-Hybrid LPR Camera 20R, with an external IR Illuminator, is a 1.3 MP B/W network camera designed solely for recognition of reflective license plates on vehicles traveling at 120 km/hr (75 mph) or less. Equipped with an external IR Illuminator which allows the maximum IR distance of 22 m (72.2 ft.), the camera is able to produce clear license plate capture for one lane under low-light conditions. It is also able to work in environments with extreme temperatures from as low as -40°C (-40°F) up to 50°C (122°F).

The GV-Hybrid LPR Camera 10R is a 1.3 MP B/W network camera designed solely for recognition of reflective license plates on vehicles traveling at 120 km/hr (75 mph) or less. With its high-power LEDs and intelligent IR, the camera is able to automatically adjust its shutter speed to the scene and produce clear license plate capture under low-light conditions. Under certain conditions, the GV-Hybrid LPR Camera 10R can capture up to two lanes in a single shot. It is also able to work in environments with extreme temperatures from as low as -40°C (-40°F) up to 50°C (122°F).

The GV-Hybrid LPR Camera 20R / 10R can be easily configured through its Web interface and you can record and play back recordings using the free GV-NVR software included in the standard package.

1.1.1 Features

- 1.3 megapixel B/W progressive scan CMOS
- Dual streams from MJPEG or H.264
- Up to 30 fps at 1280 x 1024
- Recognition for reflective License Plate only
- Maximum speed 120 km/h (75 mph)
- Ingress protection (IP67)
- Vandal resistance (IK10)
- Maximum IR distance 22 m (72.2 ft.) (for GV-Hybrid LPR Camera 20R only)
- Maximum IR distance 12 m (39.4 ft.) (for GV-Hybrid LPR Camera 10R only)
- Built-in heater and fan
- Support for TV-out
- Two-way audio
- Defog
- Motion detection
- Tampering alarm
- Privacy mask
- Text overlay
- IP address filtering
- Power supplied through PoE (PoE+, IEEE 802.3 at)
- Support for iPhone, iPad, Android and 3GPP
- ONVIF (Profile S) conformant
- 31 languages on Web interface

1.1.2 System Requirements

To access the camera functions and settings through Web browser, ensure your PC is in good network connection and use one of the following Web browsers:

- Microsoft Internet Explorer 7.x or later
- Google Chrome
- Mozilla Firefox
- Safari

Note:

1. For users of **Internet Explorer 8 or later**, additional settings are required. For details, see *Appendix C*.
2. With non-IE browsers,
   A. Motion Detection, Text Overlay and two-way audio are not supported.
   B. The Play function is only available on the live view window (Figure 3-2).
   C. RTSP streaming must be kept as enabled. For more details, see *4.3.8 RTSP / 3GPP*.

Compatible Software Version

Model	Firmware Version	GV-System Version	GV-VMS Version
GV-Hybrid LPR Camera 20R	V1.02	V8.5.7.0	14.10
GV-Hybrid LPR Camera 10R	V1.00	V8.5.5.0	N/A
	V1.01	V8.5.7.0	N/A
	V1.02		14.10

1.1.3 Packing List

- GV-Hybrid LPR Camera 20R / 10R
- Iron Screw Anchor x 4 (for GV-Hybrid LPR Camera 20R only)
- Plastic Screw Anchor x 4 (for GV-Hybrid LPR Camera 10R only)
- Expansion Screw x 4 (for GV-Hybrid LPR Camera 20R only)
- Screw x 4 (for GV-Hybrid LPR Camera 10R only)
- Washer x 4
- Big Torx Wrench
- Small Torx Wrench
- Sun-Shield Cover
- Silica Gel Bag x 2 (1 already installed)
- Sticker x 2
- GV-PA481 PoE Adapter

- GV-PA481 Power Cord
- GV-IP LPR Camera Software CD
- GV-NVR Software DVD
- GV-ASManager Software DVD

1.1.4 Camera Overview

To access the functional panel of the GV-Hybrid LPR Camera 20R / 10R, follow the section below to remove its camera cover first.

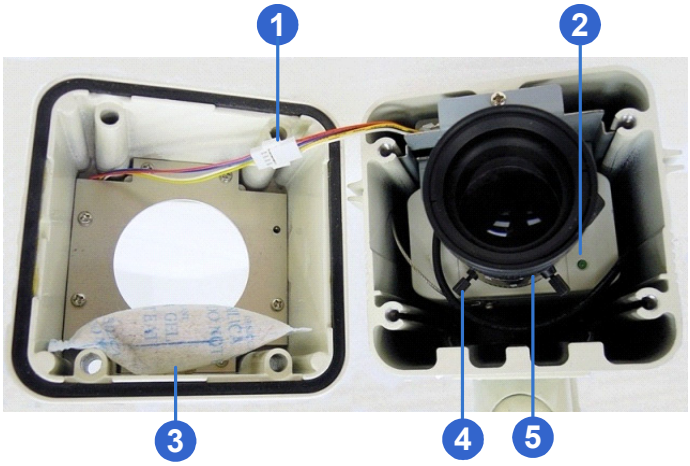


Figure 1-1

No.	Name	Description
1	IR power plug	Supplies power to the built-in IR LEDs.
2	Status LED	Turns on when the unit is ready for use.
3	Silica gel bag	Keeps the camera housing dry.
4	Zoom Screw	Adjusts the zoom of the camera.
5	Focus Screw	Adjusts the focus of the camera.

1.1.5 Device Installation

1.1.5.1 Installation Guidelines

To produce quality image and to avoid software recognition errors, make sure you adhere to the guidelines when installing your GV-Hybrid LPR Camera 20R / 10R. See *GV-LPR Camera Installation Guide*.

1.1.5.2 Installing the Camera

After you have read through the installation guides and chosen an installation site, follow the steps below to install the GV-Hybrid LPR Camera 20R / 10R. Here we use the GV-Hybrid LPR Camera 10R as the example.

1. Mark the installation site and drill four holes for screw anchors.
2. Insert the supplied screw anchors.
3. Secure the camera to the wall using the supplied washers and screws.

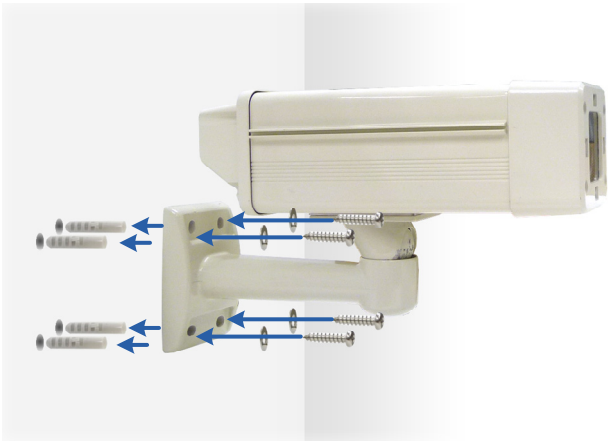


Figure 1-2

4. Connect the camera to the network and supply power via the PoE cable. See *1.6 Connecting the Camera*.
5. Access the live view. See *2.1 Accessing the Live View*.

6. Based on the live view, adjust the angle of the camera. Loosen the indicated screw with the supplied big torx wrench and adjust the joint.

Figure 1-3

Tilt Adjustment

Figure 1-4

Pan Adjustment

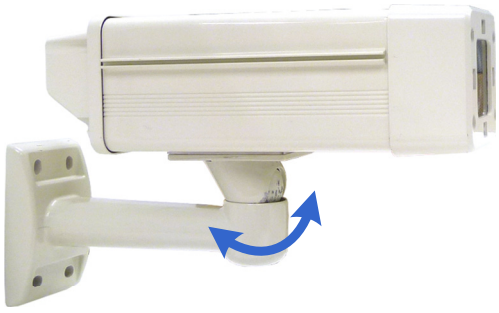


Figure 1-5

7. Based on the live view, adjust the focus and zoom of the camera.

   A. Unscrew the cover with the supplied small torx wrench.

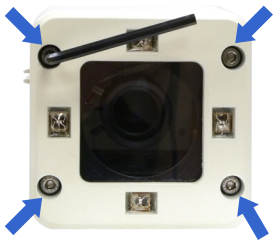


Figure 1-6

   B. Hold the connectors and unplug them.

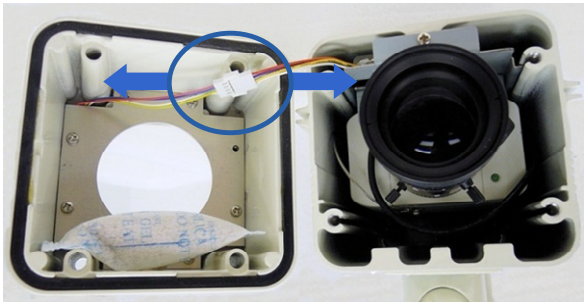


Figure 1-7

Important:

1. Unscrew and remove the cover carefully. Pulling the cover off may cause damages to the inner wiring of the camera.
2. To prevent the live view from being darkened when the cover is removed, see *LPR Setting in 4.1.1 Video Setting*.

   C. Adjust the focus and zoom.

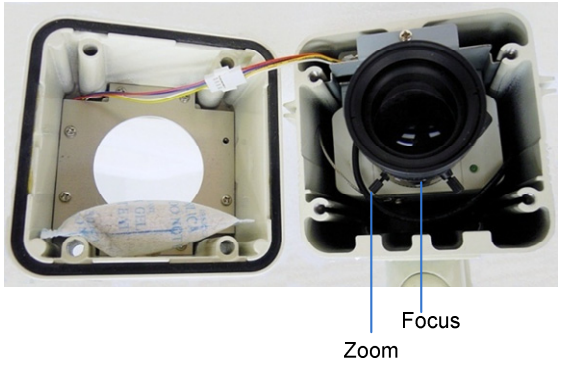


Figure 1-8

8. Replace the silica gel bag. Paste the sticker to the front side of the silica gel bag. Press the sticker several times to make sure it adheres properly. Paste the silica gel bag to the indicated place.

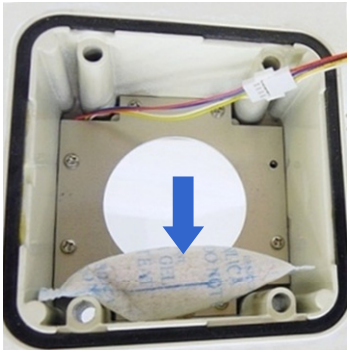


Figure 1-9

Important:

1. Be sure that the silica gel bag is concealed in the camera housing within 2 minutes of exposing to open air.
2. To prevent the lens from fogging up, you must replace the silica gel bag every time you open the camera. The gel bag loses its effectiveness when the dry camera is opened.
3. For each newly replaced silica gel bag, allow it to absorb moisture for at least 5 hours before operating the camera.

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9. Refer to step 7 to plug the connectors and secure the camera cover.

1.1.6 Connecting the Camera

Follow the steps below to connect your GV-Hybrid LPR Camera 20R / 10R.

1.1.6.1 GV-Hybrid LPR Camera 20R

1. Optionally connect a speaker to the green RCA wire and an external microphone to the pink RCA wire.
2. Optionally connect a monitor to the black BNC wire. Enable the TV-Out function by selecting the correct signal format at the TV Out field on the Web interface. See *4.1.1 Video Settings*.
3. Connect the camera's cable to the GV-PA481 PoE adapter as illustrated below. The power and network will be supplied simultaneously.
4. Connect the external IR Illuminator's cable to the power source.

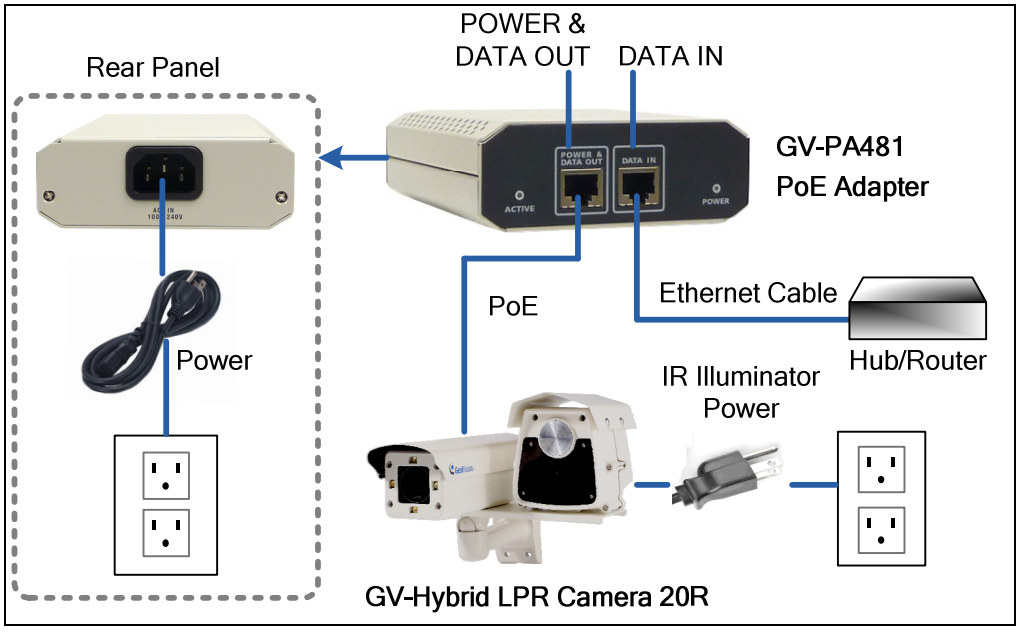


Figure 1-10

5. When the status LED of the camera is on, you are ready to access the live view, adjust the image clarity and configure the basics. *See Getting Started*, Chapter 2.

CAUTION: The surface of the external IR Illuminator is at the high temperature of up to 50°C (122°F) during operation of the GV-Hybrid LPR Camera 20R.

1.1.6.2 GV-Hybrid LPR Camera 10R

1. Optionally connect a speaker to the green RCA wire and an external microphone to the pink RCA wire.
2. Optionally connect a monitor to the black BNC wire. Enable the TV-Out function by selecting the correct signal format at the TV Out field on the Web interface. See *4.1.1 Video Settings*.
3. Connect the camera's cable to the GV-PA481 PoE adapter as illustrated below. The power and network will be supplied simultaneously.

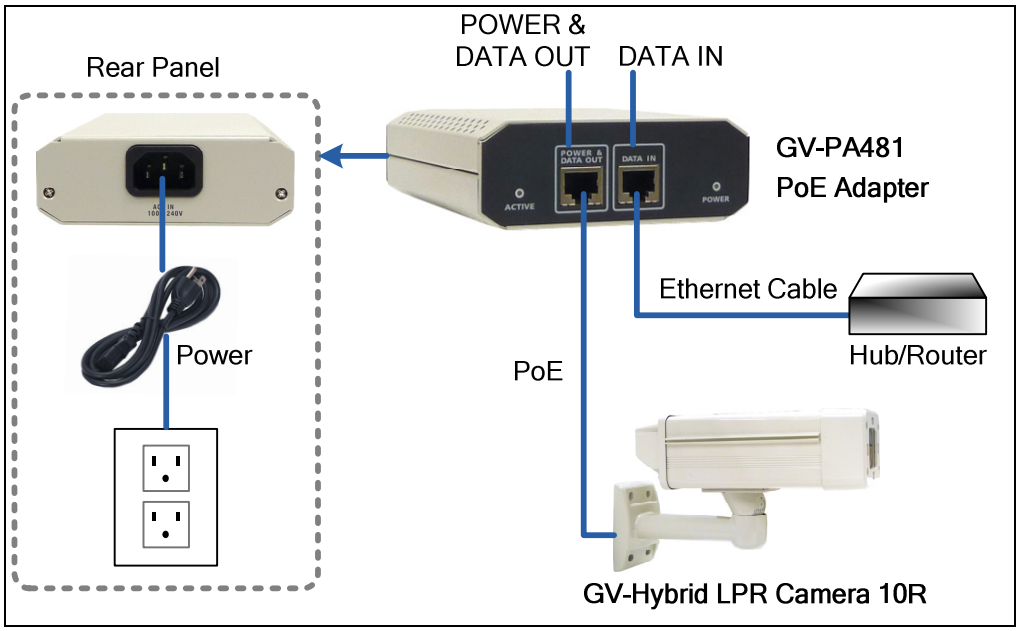


Figure 1-11

4. When the status LED of the camera is on, .you are ready to access the live view, adjust the image clarity and configure the basics. *See Getting Started*, Chapter 2.

1.1.6.3 Wire Definition

GV-Hybrid LPR Camera 20R

Figure 1-12

Camera

Wire Color	Definition
RJ-45	Ethernet
Black BNC	TV out
Green RCA	Audio Out
Pink RCA	Audio In

IR Illuminator

The black cable consists of three wires.

Wire Color	Definition
White	Line Wire
Black	Neutral Wire
Green	Ground Wire

GV-Hybrid LPR Camera 10R

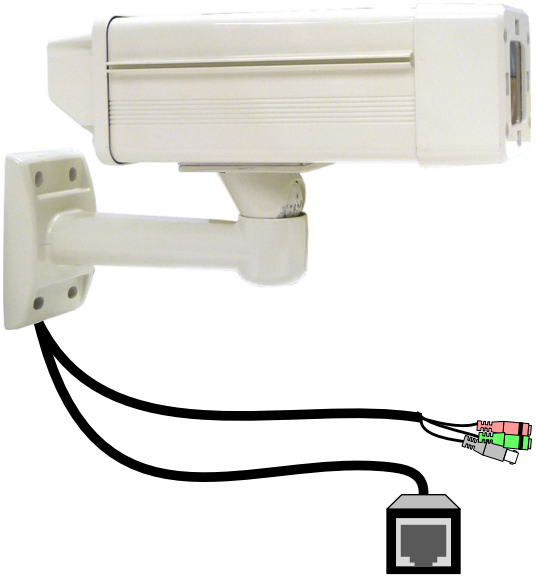


Figure 1-13

No.	Wire Color	Definition
1	RJ-45	Ethernet
2	Black BNC	TV out
3	Green RCA	Audio Out
4	Pink RCA	Audio In

1.2 GV-IP LPR Camera 5R

Ideal for parking lot installation, the GV-IP LPR Camera 5R is a 1.3 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 60 km/hr (37 mph) or less. With its multiple LEDs and intelligent IR, the camera is able to automatically adjust its shutter speed to the scene and produce clear license plate capture under low-light conditions. The motorized varifocal lens take the advantage of its motorized focus / zoom in that the user can remotely adjust the focus and zoom through the Web interface. It is weather proof (IP67) and also able to work in environments with temperatures ranging from -10°C (14°F) to 50°C (122°F).

The GV-IP LPR Camera 5R can be easily configured through its Web interface and you can record and play back recordings using the free GV-NVR software included in the standard package.

1.2.1 Features

- 1.3 megapixel B/W progressive scan CMOS
- Motorized varifocal lens for remote focus / zoom adjustment
- Dual streams from MJPEG or H.264
- Up to 30 fps at 1280 x 1024
- Maximum Speed 60 km/h (37 mph)
- Recognition for reflective License Plate only
- Ingress protection (IP67)
- Vandal Resistance (IK10)
- Maximum IR distance 5 M (16.4 ft)
- Built-in fan
- Defog
- Motion detection
- Privacy mask
- Text Overlay
- IP address filtering
- Power supplied through PoE (PoE+, IEEE 802.3 at)
- Support for iPhone, iPad, Android and 3GPP
- ONVIF (Profile S) conformant
- 31 languages on Web interface

1.2.2 System Requirements

To access the camera functions and settings through Web browser, ensure your PC is in good network connection and use one of the following Web browsers:

- Microsoft Internet Explorer 7.x or later
- Google Chrome
- Mozilla Firefox
- Safari

Note:

1. For users of **Internet Explorer 8 or later**, additional settings are required. For details, see Appendix C.
2. With non-IE browsers,
   A. Motion Detection, Text Overlay and two-way audio are not supported.
   B. The Play function is only available on the live view window (Figure 3-2).
   C. RTSP streaming must be kept as enabled. For more details, see 4.3.8 RTSP / 3GPP.

Compatible Software Version

Model	Firmware Version	GV-System Version	GV-VMS Version
GV-IR LPR Camera 5R	V1.00	V8.5.8.0	N/A
	V1.01	V8.5.9.0	14.10

1.2.3 Packing List

- GV-IP LPR Camera 5R
- Self Tapping Screw x 3
- Plastic Screw Anchor x 3
- Torx Wrench x 2
- Sun-Shield Cover Kit (1 Sun-Shield Cover, 2 Philips Head Screws, 2 Plastic Screw Spacers and 2 Hexagon Screws included)
- Silica Gel Bag x 2 (1 already installed)
- GV-IP LPR Camera Software CD
- GV-NVR Software DVD
- GV-ASManager Software DVD

1.2.4 Device Installation

1.2.4.1 Installation Guidelines

To produce quality image and to avoid software recognition errors, make sure you adhere to the guidelines when installing your GV-IP LPR Camera 5R. See *GV-LPR Camera Installation Guide*.

1.2.4.2 Installing the Camera

After you have read through the installation guides and chosen an installation site, follow the steps below to install the GV-IP LPR Camera 5R.

1. Mark the installation site and drill three holes for screw anchors.
2. Insert the supplied screw anchors.
3. Secure the camera to the wall using the supplied screws.

Figure 1-14

4. Remove the protection sticker from the camera's cover.
5. Connect the camera to the network and supply power via the PoE cable. See *1.2.6 Connecting the Camera*.
6. Access the live view. See *Chapter 2 Getting Started*.
7. Based on the live view, adjust the angle, zoom and focus of the camera of the camera. For adjusting three shafts, see *1.2.7 Adjusting the Angles.* For changing zoom and focus, see *Figure 1-14*.
8. Install the sun-shield cover to the camera. For details, see *1.2.9 Installing the Sun-Shield Cover*.

1.2.5 Connecting the Camera

It is suggested to use GV-PA191 PoE Adapter to connect the GV-IP LPR Camera 5R to the network. Follow the steps below for connection.

1. Connect the camera's cable to the GV-PA191 PoE Adapter as illustrated below. The power and network will be supplied simultaneously.

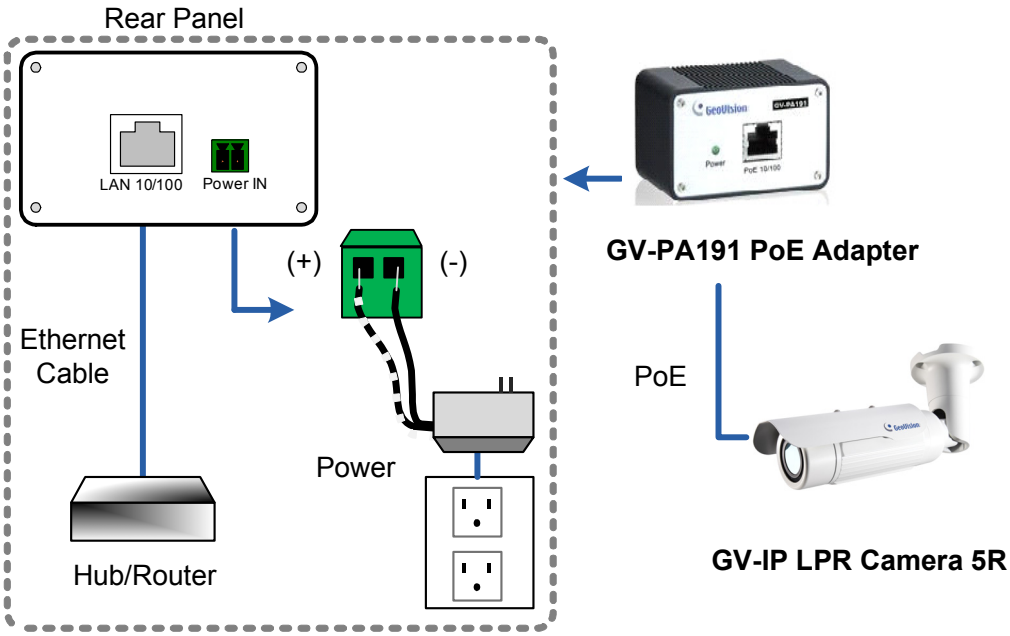


Figure 1-15

2. When the Power LED on the front panel of the GV-PA191 PoE Adapter turns green, you are ready to access the live view, adjust the image clarity and configure the basics. *See Getting Started*, Chapter 2.

Note: The GV-PA191 PoE Adapter (AC Power Adapter included) can be purchased upon request.

1.2.6 Adjusting the Angles

The GV-IP LPR Camera 5R is designed to be adjustable in three shafts for easy and flexible installation.

First Shaft

You can adjust the camera body by 360 degrees to the right or the left.

1. Unscrew the panning lock screw with the torx wrench.

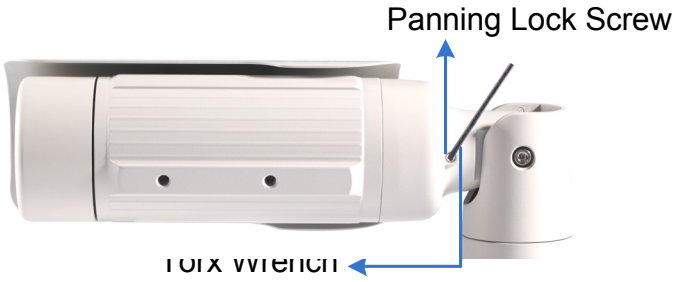


Figure 1-16

2. Adjust the angle of camera body to the right or the left, and fasten the panning lock screw.

Figure 1-17

Second Shaft

You can adjust the camera body up and down by 90, 112.5, 135, 157.5 or 180 degrees by using the gears inside the camera body and the camera base.

1. Unscrew the tilting lock screw with the torx wrench.

Figure 1-18

2. Hold the camera body, and move the camera base to the right to separate the camera gears.

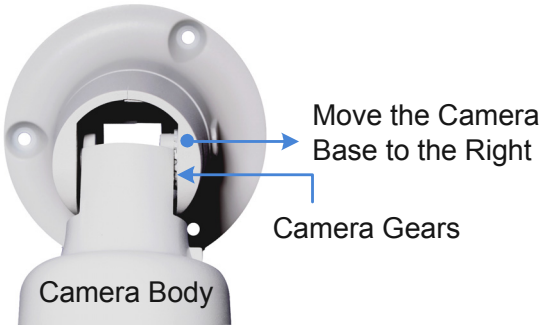


Figure 1-19

3. Adjust the angle of camera body to 90°, 112.5°, 135°, 157.5° or 180°. Then move the camera base to the left to combine the gears.

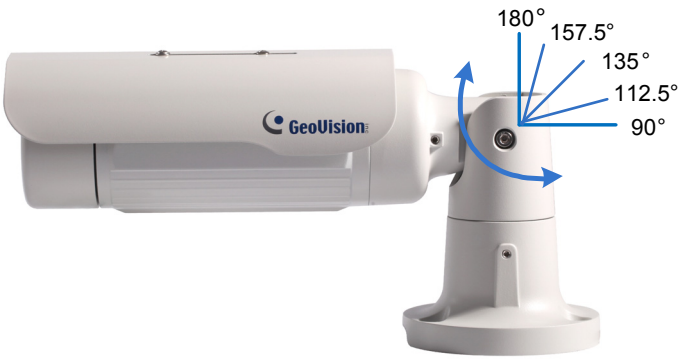


Figure 1-20

4. Fasten the tilting lock screw.

Third Shaft

You can adjust the camera base by 360°.

1. Unscrew the base fixing screw with the torx wrench.

Figure 1-21

2. Adjust the angle of camera base, and fasten the base fixing screw.

Figure 1-22

1.2.7 Replacing the Silica Gel Bag

To replace the original silica gel bag with a new one, follow the steps below.

1. Loosen the camera's cover.

Figure 1-23

2. Remove the silica gel bag.

Figure 1-24

3. Insert a new silica gel bag to the camera module and fasten the camera's cover within 2 minutes of opening the silica gel bag package.

IMPORTANT:

1. The silica gel loses its effectiveness when the dry camera is opened. To prevent the lens from fogging up, replace the silica gel bag every time when you open the camera and conceal the gel bag in the camera within two minutes of exposing to the open air.
2. For each newly replaced silica gel bag, allow it to absorb moisture for at least 5 hours before operating the camera.

1.2.8 Installing the Sun-Shield Cover

After setting up the Bullet Camera, now you can install the sun-shield cover to the camera.

1. Fasten the hexagon screws either on top or below the camera.

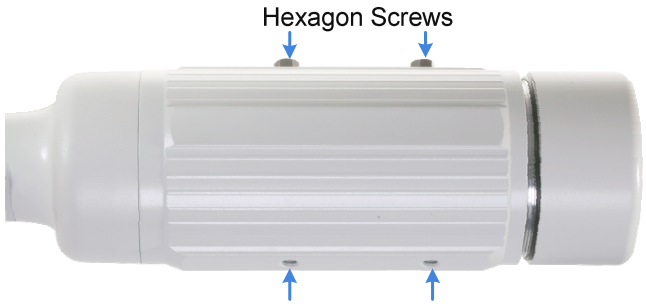


Figure 1-25

2. Put the sun-shield cover on top of hexagon screws. Make sure to aim the rear hexagon screw at the edge of the sun-shield cover's aperture for optimal sun-shield performance.

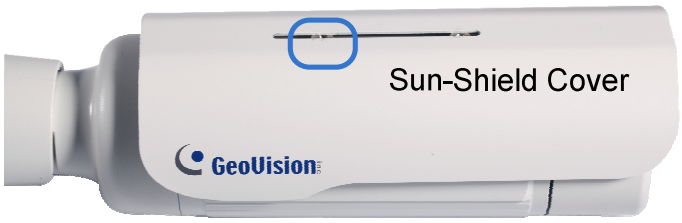


Figure 1-26

3. Fasten the Philips head screws with the plastic screw spacers.

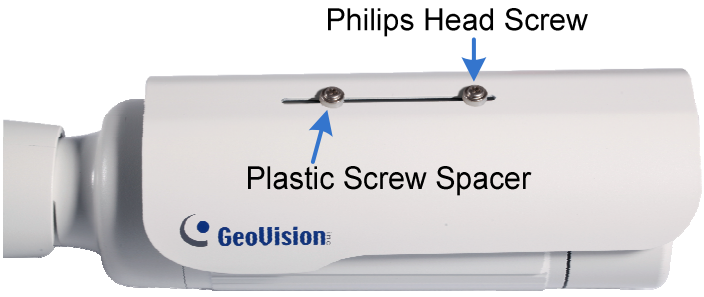


Figure 1-27

1.3 GV-LPC1100

The GV-LPC1100 is a 1.3 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 120 km/hr (75 mph) or less. With its multiple LEDs and intelligent IR, the camera is able to automatically adjust its shutter speed to the scene and produce clear license plate capture for one lane under low-light conditions. The motorized varifocal lens take the advantage of its motorized focus / zoom in that the user can remotely adjust the focus and zoom through the Web interface. It is weather proof (IP67) and also able to work in environments with temperatures ranging from -40°C (104°F) to 50°C (122°F).

The GV-LPC1100 can be easily configured through its Web interface and you can record and play back recordings using the free GV-NVR software included in the standard package.

1.3.1 Features

- 1.3 megapixel B/W progressive scan CMOS
- Motorized varifocal lens for remote focus / zoom adjustment
- Dual streams from MJPEG or H.264
- Up to 30 fps at 1280 x 1024
- Maximum speed 120 km/h (75 mph)
- Recognition for reflective License Plate only
- Ingress protection (IP67)
- Vandal Resistance (IK10)
- Maximum IR distance 10 m (32.8 ft)
- DC 48V, AC 24V, High PoE (PoE++, 120 W)
- Built-in heater and fan
- Support for TV-out
- Support for I/O (1 in / 1 out)
- Two-way audio
- Defog
- Motion detection
- Privacy mask
- Text Overlay
- IP address filtering
- Support for iPhone, iPad, Android and 3GPP
- ONVIF (Profile S) conformant
- 31 languages on Web interface

1.3.2 System Requirements

To access the camera functions and settings through Web browser, ensure your PC is in good network connection and use one of the following Web browsers:

- Microsoft Internet Explorer 7.x or later
- Google Chrome
- Mozilla Firefox
- Safari

Note:

1. For users of **Internet Explorer 8 or later**, additional settings are required. For details, see Appendix C.
2. With non-IE browsers,
   A. Motion Detection, Text Overlay and two-way audio are not supported.
   B. The Play function is only available on the live view window (Figure 3-2).
   C. RTSP streaming must be kept as enabled. For more details, see 4.3.8 RTSP / 3GPP.

Compatible Software Version

Model	Firmware Version	GV-System Version	GV-VMS
GV-LPC1100	V1.01	V8.5.9.0 + Patch	V14.10

1.3.3 Packing List

- The GV-LPC1100 camera
- Screw Anchor x 4
- Screw x 4
- Washer x 4
- Torx Wrench x 1
- GV-PA482 PoE Adapter

- Power Adapter (DC 48V, 2.5A, 120 W)
- AC Power Cord
- Silica Gel Bag x 1 (1 already installed)
- Adhesive tape for Silica Gel Bag x 1
- GV-IP LPR Camera Software CD
- GV-NVR Software DVD
- GV-ASManager Software DVD
- GV-LPR Camera Installation Guide

1.3.4 Device Installation

1.3.4.1 Installation Guidelines

To produce quality image and to avoid software recognition errors, make sure you adhere to the guidelines when installing your GV-LPC1100. See *GV-LPR Camera Installation Guide*.

1.3.4.2 Installing the Camera

After you have read through the installation guides and chosen an installation site, follow the steps below to install the GV-LPC1100.

1. Mark the installation site and drill four holes for screw anchors.
2. Insert the supplied screw anchors.
3. Secure the camera to the wall using the supplied screws.

Figure 1-28

4. Connect the camera for power and network connection. See *1.3.5 Connecting the Camera*.
5. Access the live view. See *Chapter 2 Getting Started*.

6. Based on the live view, adjust the angle, zoom and focus of the camera. Loosen the indicated screw with the supplied big torx wretch and adjust the joint.

Figure 1-29

Tilt Adjustment

Figure 1-30

Pan Adjustment

Figure 1-31

1.3.5 Connecting the Camera

GV-IP LPR Camera supports three power specifications: DC 48V, AC 24V, High PoE (120 W).

Follow the steps below to connect your GV-LPC1100 to power, network and other wires needed.

1.3.5.1 PoE Connection

Use the supplied GV-PA482 PoE Adapter to connect the camera to the power and network at the same time. Two Ethernet cables are required for the connection.

1. Inset one end of the Ethernet cable into the **PoE 10/100** port on the GV-PA482. Connect the other end of the cable to your camera.
2. Insert one end of the Ethernet cable into the **LAN 10/100** port on the GV-PA482. Connect the other end of the cable to the hub or router connecting to your computer.

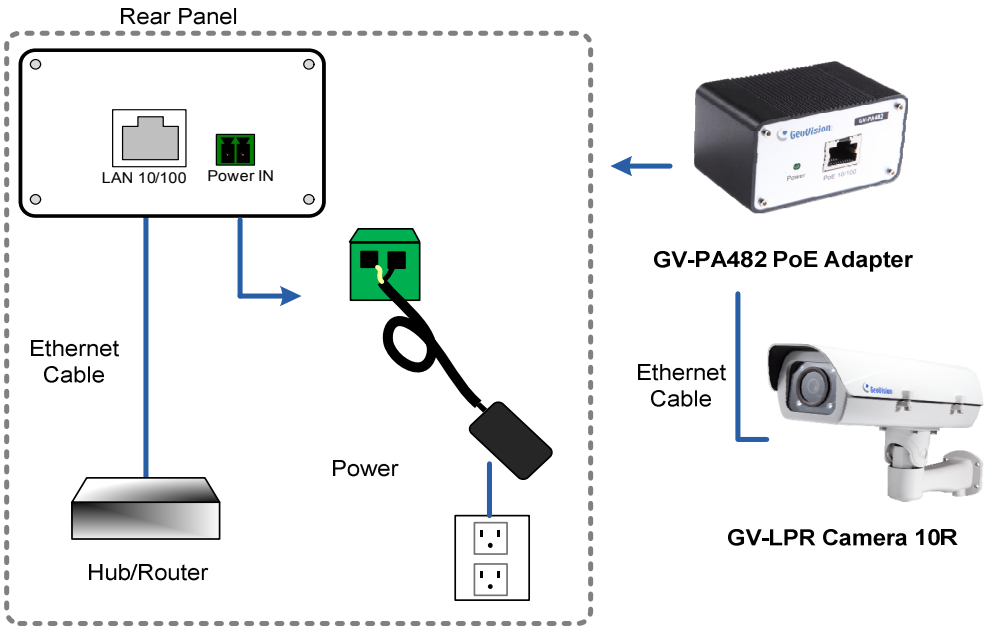


Figure 1-32

3. Insert the white wire of the supplied DC power adaptor into left-side pin of the terminal block on the GV-PA482, and the black wire to the right-side pin.
4. Attach the AC power cord to the DC power adaptor.
5. Connect the AC power cord to the power outlet.
6. When the Power LED on the front panel of the GV-PA482 turns green, you are ready to access the live view, adjust the image clarity and configure the basics. *See Getting Started*, Chapter 2.

1.3.5.2 Power Adapter Connection

Besides PoE connection, you can use the supplied DC power adaptor, and connect the camera to the power.

1. Plug the DC power adapter to the 2-pin terminal block on the camera by inserting the wire with white lines to the (+) pin and the black wire to the (-) pin.

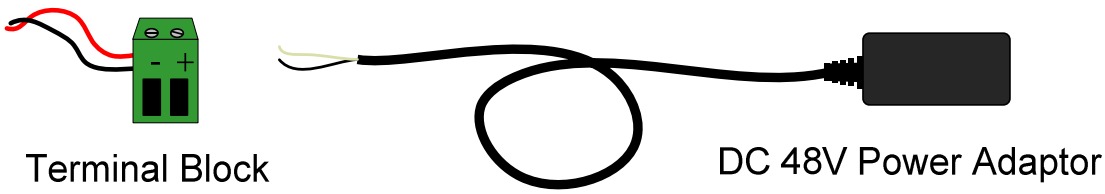


Figure 1-33

2. Attach the AC power cord to the DC power adaptor.
3. Connect the AC power cord to a power source.

Note: Except DC power input, you can use AC 24V power supply for connection. You need to prepare a separate power cord for AC 24V power connection.

1.3.5.3 Wire Definition

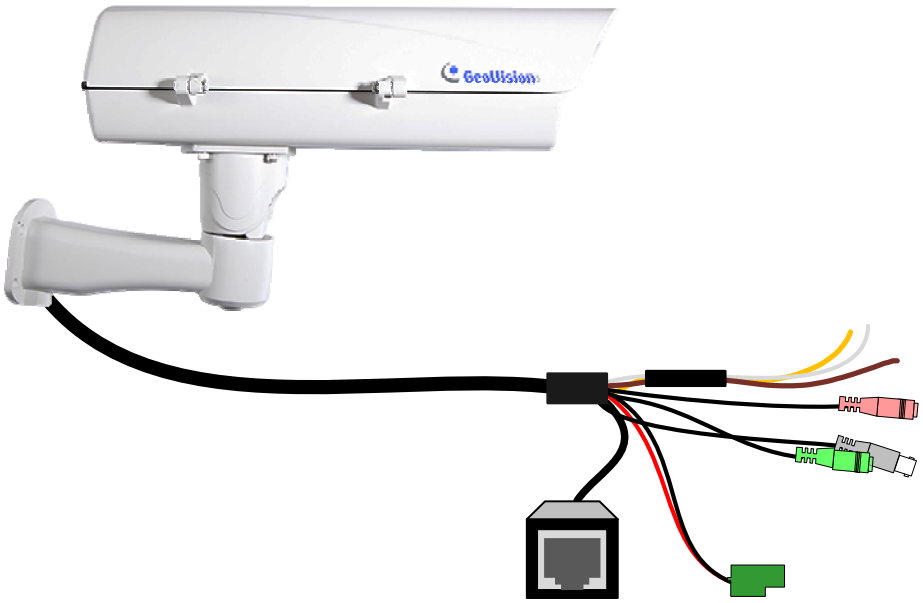


Figure 1-34

Camera

Wire	Definition
RJ-45	Ethernet
Black BNC	TV out
Green RCA	Audio Out
Pink RCA	Audio In
Brown	Digital Output
Yellow	Digital Input
White	GND
2-Pin Terminal Block	Power

1.3.6 Replacing the Silica Gel Bag

To replace the original silica gel bag with a new one, follow the steps below.

1. Loose the screws holding the camera's lid with the torx wrench.

Figure 1-35

2. Open the camera's lid and you will find a silica gel bag attached to the interior of the lid.

Figure 1-36

3. Remove the silica gel bag and place a new bag back to its original position.
4. Fasten the camera's lid within 2 minutes of replacing the silica gel bag.

IMPORTANT:

1. The silica gel loses its effectiveness when the dry camera is opened. To prevent the lens from fogging up, replace the silica gel bag every time when you open the camera and conceal the gel bag in the camera within two minutes of exposing to the open air.
2. For each newly replaced silica gel bag, allow it to absorb moisture for at least 5 hours before operating the camera.

---

3. GV-LPC1100 currently does not support recording to Micro SD card or Mini USB function.

Chapter 2 Getting Started

2.1 Looking Up the IP Address

By default, your GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 is assigned with an unused IP address by the DHCP server when the camera is connected to the network. This IP address remains unchanged unless you unplug or disconnect your camera from the network.

Note: If your router does not support DHCP, the default IP address will be **192.168.0.10**. In this case, it is strongly suggested to modify the IP address to avoid IP address conflict with other GeoVision IP device on the same LAN. To change the IP address, see *Changing the IP Address* later in this section.

Follow the steps below to find out the IP address of your camera:

1. Install the GV-IP Device Utility program from the Software DVD.

Note: The PC installed with GV-IP Device Utility must be under the same LAN with the camera you wish to configure.

---

2. On the PC desktop, select **Start**, point to **Programs** and select **GV IP Device Utility** to execute the program. The GV-IP Device Utility window appears and automatically searches for the GV-IP devices on the same LAN.

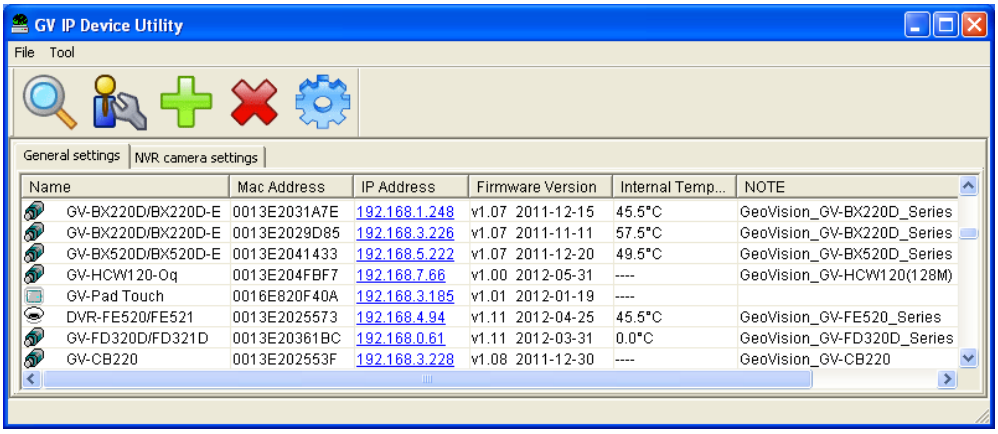

GV IP Device Utility
File Tool
General settings
NVR camera settings
Name Mac Address IP Address Firmware Version Internal Temp... NOTE
GV-BX220D/BX220D-E 0013E2031A7E 192.168.1.248 v1.07 2011-12-15 45.5°C GeoVision_GV-BX220D_Series
GV-BX220D/BX220D-E 0013E2029D85 192.168.3.226 v1.07 2011-11-11 57.5°C GeoVision_GV-BX220D_Series
GV-BX520D/BX520D-E 0013E2041433 192.168.5.222 v1.07 2011-12-20 49.5°C GeoVision_GV-BX520D_Series
GV-HCW120-Oq 0013E204FBF7 192.168.7.66 v1.00 2012-05-31 ---- GeoVision_GV-HCW120(128M)
GV-Pad Touch 0016E820F40A 192.168.3.185 v1.01 2012-01-19 ----
DVR-FE520/FE521 0013E2025573 192.168.4.94 v1.11 2012-04-25 45.5°C GeoVision_GV-FE520_Series
GV-FD320D/FD321D 0013E20361BC 192.168.0.61 v1.11 2012-03-31 0.0°C GeoVision_GV-FD320D_Series
GV-CB220 0013E202553F 192.168.3.228 v1.08 2011-12-30 ---- GeoVision_GV-CB220

Figure 2-1

3. Click the **Name** or **Mac Address** column to sort.

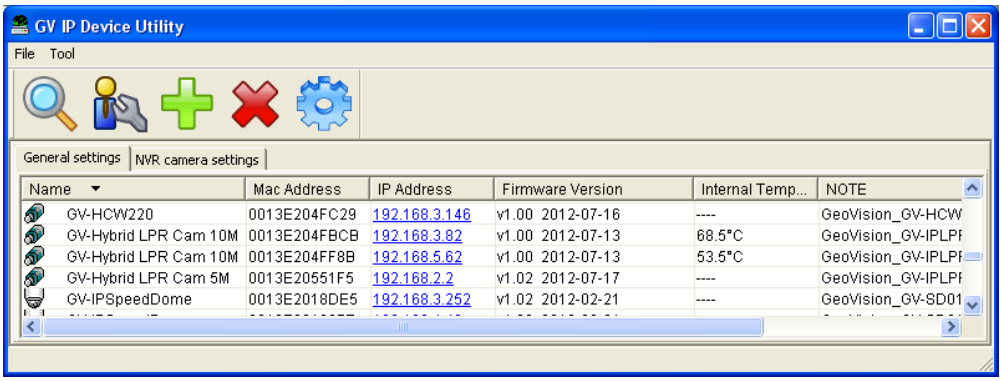

GV IP Device Utility
File Tool
General settings
NVR camera settings
Name
Mac Address
IP Address
Firmware Version
Internal Temp...
NOTE
GV-HCW220 0013E204FC29 192.168.3.146 v1.00 2012-07-16 ---- GeoVision_GV-HCW
GV-Hybrid LPR Cam 10M 0013E204FBCB 192.168.3.82 v1.00 2012-07-13 68.5°C GeoVision_GV-IPLPF
GV-Hybrid LPR Cam 10M 0013E204FF8B 192.168.5.62 v1.00 2012-07-13 53.5°C GeoVision_GV-IPLPF
GV-Hybrid LPR Cam 5M 0013E20551F5 192.168.2.2 v1.02 2012-07-17 ---- GeoVision_GV-IPLPF
GV-IPSpeedDome 0013E2018DE5 192.168.3.252 v1.02 2012-02-21 ---- GeoVision_GV-SD01

Figure 2-2

4. Find the Mac Address of the camera to see its IP address.

Changing the IP Address

To modify the static IP address or set the camera to a public dynamic IP address, log in the Web interface to access the network setting page.

1. Open your Web browser, and type in the IP address.
   - For static network connection, type the default IP address http://192.168.0.10
   - For DHCP connection, follow steps in *2.1 Looking Up the IP Address* to look up the current IP address.
2. In both Login and Password fields, type the default value **admin**. Click **Apply**.
3. In the left menu, select **Network** and then **LAN** to begin the network settings. This page appears.

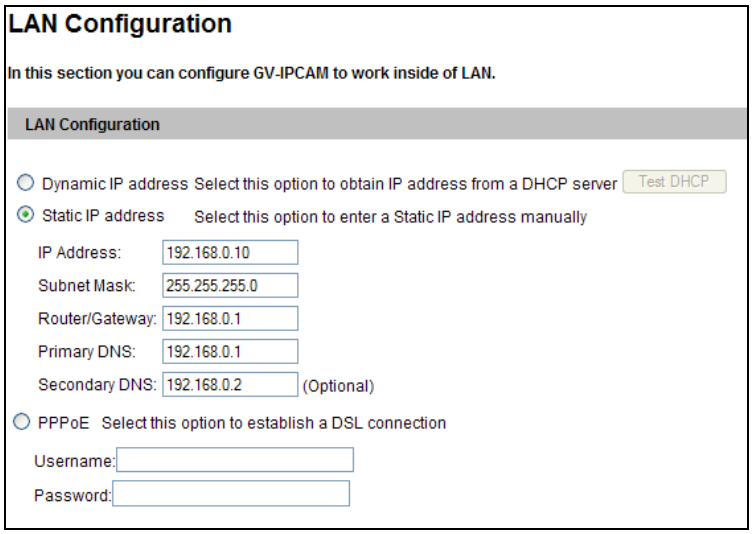

LAN Configuration
In this section you can configure GV-IPCAM to work inside of LAN.
LAN Configuration
Dynamic IP address Select this option to obtain IP address from a DHCP server
Test DHCP
Static IP address Select this option to enter a Static IP address manually
IP Address: 192.168.0.10
Subnet Mask: 255.255.255.0
Router/Gateway: 192.168.0.1
Primary DNS: 192.168.0.1
Secondary DNS: 192.168.0.2 (Optional)
PPPoE Select this option to establish a DSL connection
Username:
Password:

Figure 2-3

4. Select **Static IP address** or **PPPoE** and type the required network information.
5. Click **Apply**. The camera is now accessible by entering the assigned IP address on the Web browser.

Important:

1. If your camera uses a public dynamic IP address via PPPoE, use the dynamic DNS Service to obtain a domain name linked to the camera's changing IP address first. For details on Dynamic IP Address and PPPoE, see *4.5.2 Advanced TCP/IP* and *4.5.1 LAN Configuration.*
2. If **PPPoE** is enabled and you cannot access the camera, you may have to reset it to the factory default and then perform the network settings again. To restore the factory settings, see *5.3 Restoring to Factory Default Settings.*

2.2 Accessing Your Surveillance Images

Follow these steps to access your surveillance images:

1. Open the Internet Explorer browser.
2. Enter the IP address or domain name of the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 in the **Location/Address** field of your browser. To look up the IP address, see *2.1 Looking Up the IP Address*.

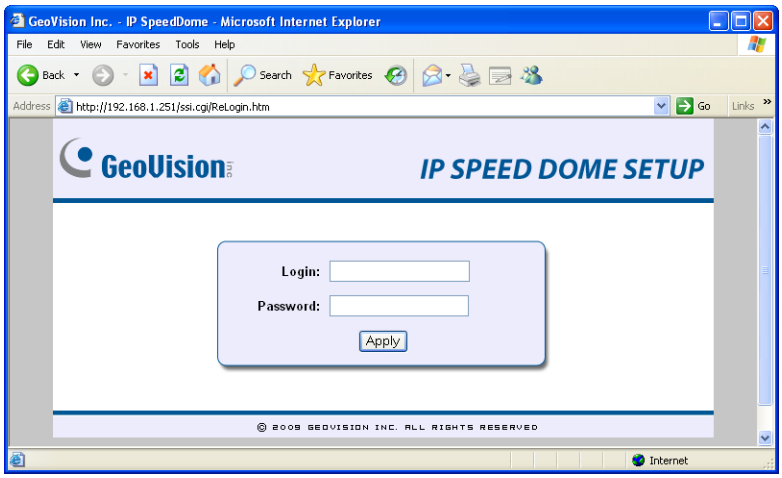


Figure 2-4

3. Enter the login name and password. The administrator account has unrestricted access to all the features and functions. The guest account is restricted to accessing live view and network status information.
   - The default login name and password for Administrator are **admin**.
   - The default login name and password for Guest are **guest**.
4. A video image, similar to the example in *Figure 3-1*, is now displayed on your browser.

Note: To enable the updating of images in Microsoft Internet Explorer, you must set your browser to allow ActiveX Controls and perform a once-only installation of GeoVision's ActiveX component onto your computer.

2.3 Configuring the Basics

Once you have installed and logged in the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, you are ready to configure some of its primary settings through the Web interface:

- Date and time adjustment: see *4.6.1 Date and Time Settings*.
- Login and privileged passwords: see *4.6.4 User Account*.
- Network gateway: see *4.5 Network*.
- Camera image adjustment: see *3.2 The Control Panel of the Live View Window*.
- Video format, resolution and frame rate: see *4.1.1 Video Setting.*

Chapter 3 Guest Mode and Live View Panel

This section introduces the features of the guest mode and the Live View window.

Main Page of Guest Mode

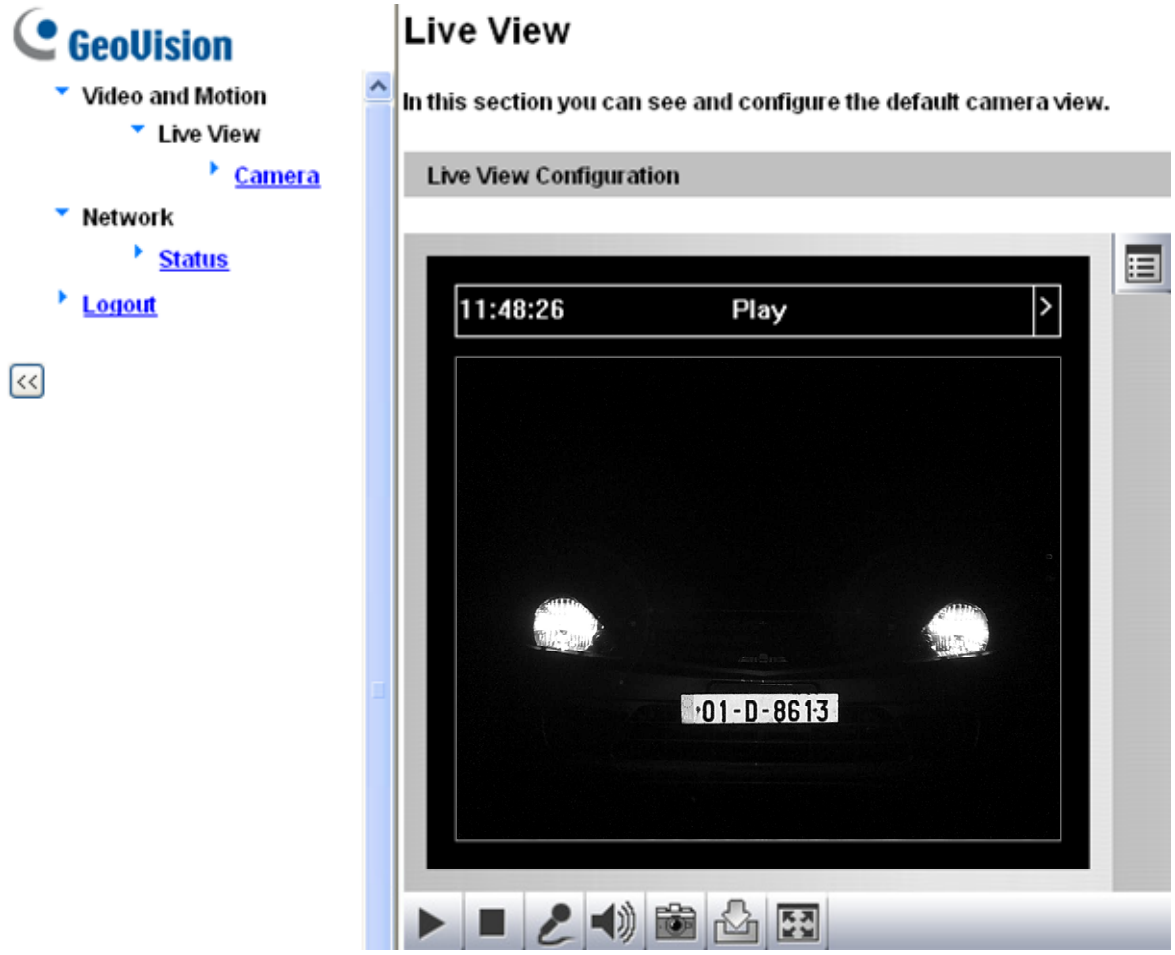


Figure 3-1

3.1 The Live View Window

In the left menu, click **Live View**, and then select **Camera** to see the live video.

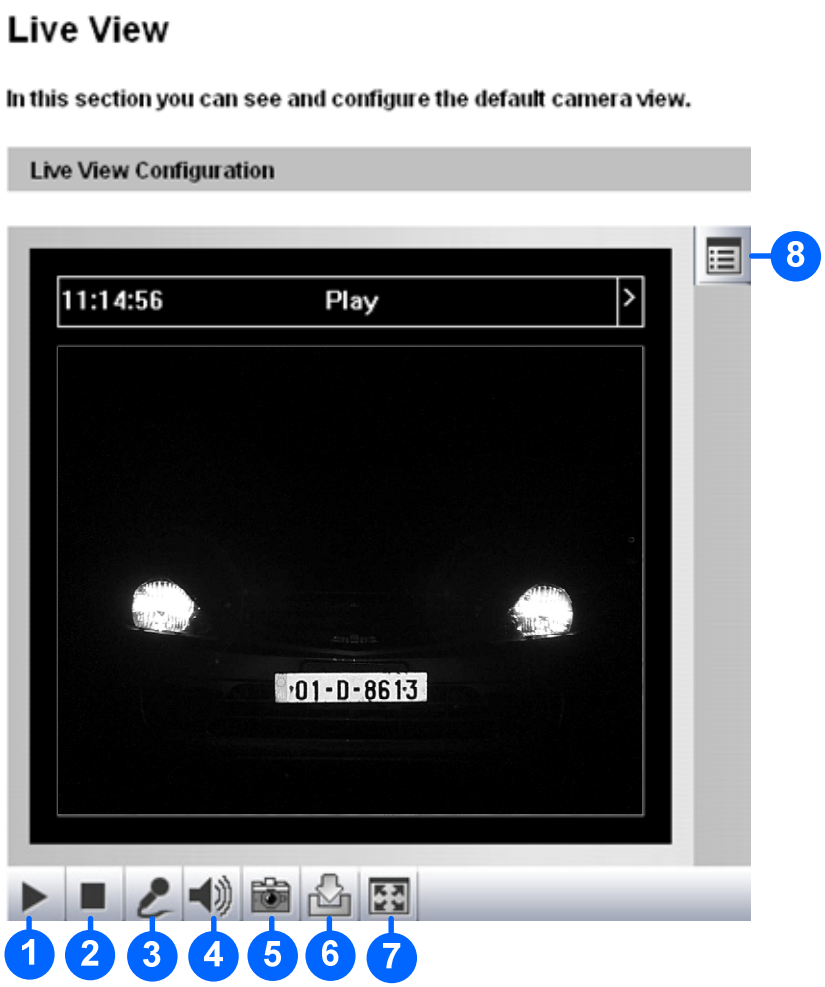


Figure 3-2

No.	Name	Function
1	Play	Plays live video.
2	Stop	Stops playing video.
3	Microphone	Talks to the surveillance area from the local computer. Note this function is not available for **GV-IP LPR Camera 5R**.
4	Speaker	Listens to the audio around the camera. Note this function is not available for **GV-IP LPR Camera 5R**.
5	Snapshot	Takes a snapshot of live video. --- See *3.3 Snapshot of a Live Video*.
6	File Save	Records live video to the local computer. --- See *3.4 Video Recording*.

No.	Name	Function
7	Full Screen	Switches to full screen view. Right-click the image to have these options: **Snapshot**, **Full Screen**, **Resolution**, **PIP** and **PAP**. --- See *3.5 Picture-in-Picture and Picture-and-Picture View.*
8	Show System Menu	Brings up these functions: **Alarm Notify**, **Video and Audio Configuration, Remote Config**, **Show Camera Name** and **Image Enhance**. --- See *3.6 Alarm Notification*, *3.7 Video and Audio Configuration*, *3.8 Remote Configuration*, *3.9 Camera Name Display* and *3.10 Image Enhancement* respectively.

3.2 The Control Panel of the Live View Window

To open the control panel of the Live View window, click the arrow button on top of the viewer. You can access the following functions by using the right and left arrow buttons on the control panel.

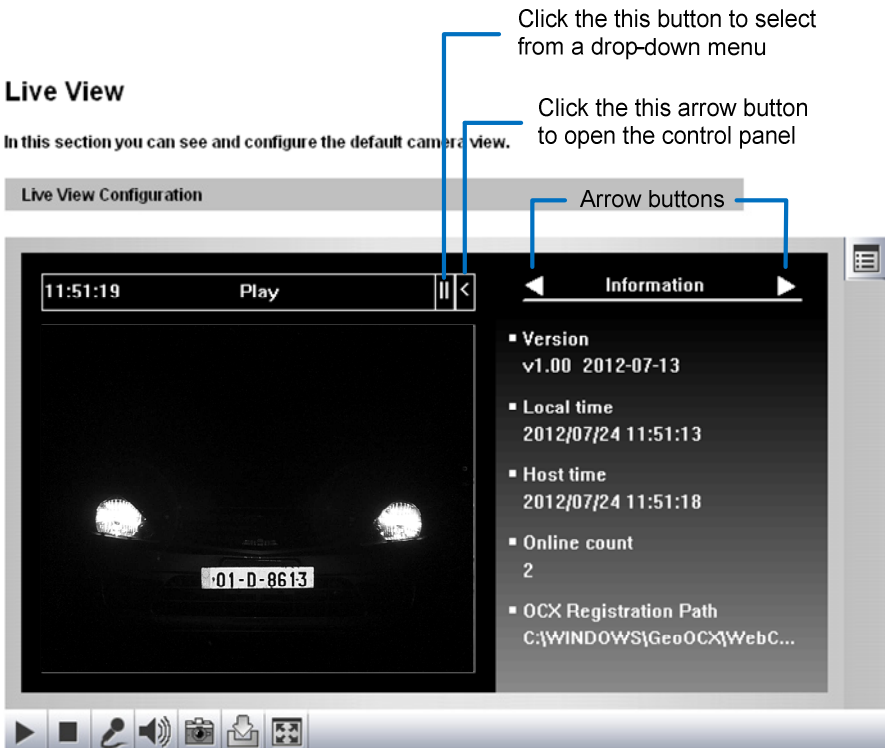


Figure 3-3

[Information] Displays the version of the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, local time of the local computer, time of the camera, the number of users logging in to the camera and the OCX registration path.

[Video] Displays the current video codec, resolution and data rate.

[Audio] Displays the audio data rates when the microphone and speaker devices are enabled.

[Alarm Notify] Displays the captured images by motion detection. For this function to work, you must configure the Alarm Notify settings first. See *3.6 Alarm Notification*.

[Camera Adjustment] Adjust the image quality settings. Click **Save** to store the changes to the settings.

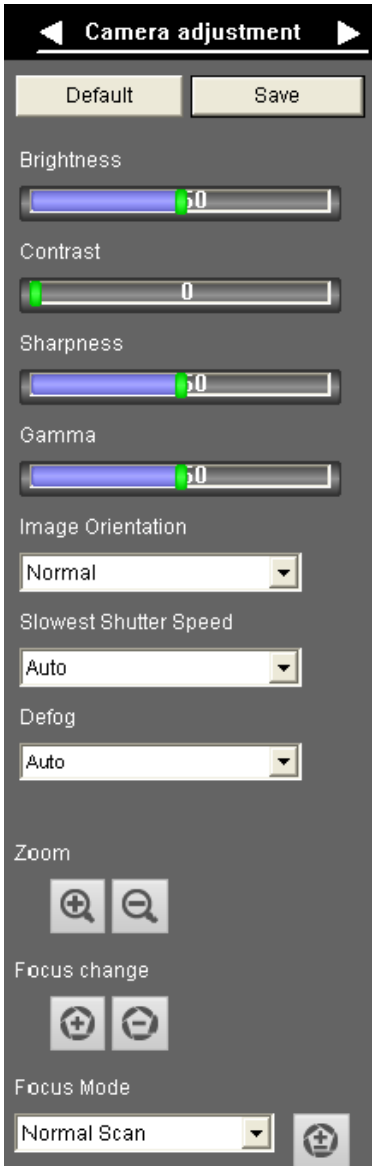


Figure 3-4

- **Brightness:** Adjust the brightness of the image.
- **Contrast:** Adjust the relative differences between one pixel and the next.
- **Sharpness:** Adjust the sharpness of the image.
- **Gamma:** Adjust the relative proportions of bright and dark areas.
- **Image Orientation:** Change the image orientation on the Live View window.

- **Slowest Shutter Speed:** Set the shutter speed. Shutter speed controls the amount of the lights enters the image sensor and directly impacts the quality of image presentation. A slow shutter speed allows higher light exposure that creates a brighter overall image by blurring moving objects and bringing out background details, and a faster shutter speed lowers color and image clarity in order to capture motions. The minimum shutter speed ranges from 1/500 to 1/8000 sec. Select **Auto** for automatic shutter control or select a shutter speed value.
- **Defog:** Select **Auto** to automatically enhance the visibility of images. Select **Close** to disable the function.
- **Zoom:** Click the **Zoom In** and **Zoom Out** buttons to adjust the apparent distance of the scene. Note this function is only available for **GV-IP LPR Camera 5R** and **GV-LPC1100**.
- **Focus Change:** Click the **Focus In** and **Focus Out** buttons to adjust the focus. To focus automatically, click the **Auto Focus** button. Note this function is only available for **GV-IP LPR Camera 5R** and **GV-LPC1100**.
- **Focus Mode:** Select **Normal Scan**, **Regional Scan** or **Full Scan** and then click the Start button to automatically adjust the camera focus. The **Normal Scan** mode focuses the camera the fastest. The **Regional Scan** mode focuses the area selected on the live view. The **Full Scan** mode performs a detailed checkup and applies the best focus. Note this function is only available for **GV-IP LPR Camera 5R** and **GV-LPC1100**.

[Internal Temperature] Shows the current internal temperature of the camera and the normal temperature range.

[Download] Allows you to install programs from the hard drive.

3.3 Snapshot of a Live Video

To take a snapshot of live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 3-2). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and select **JPEG** or **BMP** for **Save as Type**. You may also choose to display the camera name and/or the date, the text color and image quality for the snapshot.
3. Click the **Save** button to save the image in the local computer.

Note: You can also obtain a snapshot of the live view without logging in the user interface by executing the CGI command. See *Appendix A*.

3.4 Video Recording

You can record live video for a certain period of time to your local computer.

1. Click the **File Save** button (No. 6, Figure 3-2). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and move the **Time Period** scroll bar to specify the time length of the video clip from 1 to 5 minutes.
3. Click the **Save** button to start recording.
4. To stop recording, click the **Stop** button (No. 2, Figure 3-2).

3.5 Picture-in-Picture and Picture-and-Picture View

The Live View window provides two types of close-up views: **Picture-in-Picture (PIP)** and **Picture-and Picture (PAP)**. The two views are useful to provide clear and detailed images of the surveillance area.

Picture-in-Picture View

With the Picture-in-Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video.

Figure 3-5

1. Right-click the live view and select **PIP**. An inset window appears.
2. Click the insert window. A navigation box appears.
3. Move the navigation box around in the inset window to have a close-up view of the selected area.
4. To adjust the navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
5. To exit the PIP view, right-click the image and click **PIP** again.

Picture-and-Picture View

With the Picture-and-Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. A total of 7 close-up views can be defined.

Figure 3-6

1. Right-click the live view and select **PAP**. A row of three inset windows appears at the bottom.
2. Draw a navigation box on the image, and this selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To add, display/hide or to change the frame color of the navigation boxes, right-click the live view, select **Mega Pixel Setting** and click one of these options:
   - **Enable Add-Focus-Area Mode**: Allows the user to add navigation boxes to the image.
   - **Display Focus Area of PAP Mode:** Displays or hides the navigation boxes on the image
   - **Set Color of Focus Area:** Changes the color of the box frames.
6. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and click **Delete**.
7. To exit the PAP view, right-click the image and click **PAP** again.

3.6 Alarm Notification

When a motion is detected, you can be alerted by a pop-up live video and view up to four captured images.

Figure 3-7

To configure this function, click the **Show System Menu** button (No. 8, Figure 3-2), and select **Alarm Notify**. This dialog box appears.

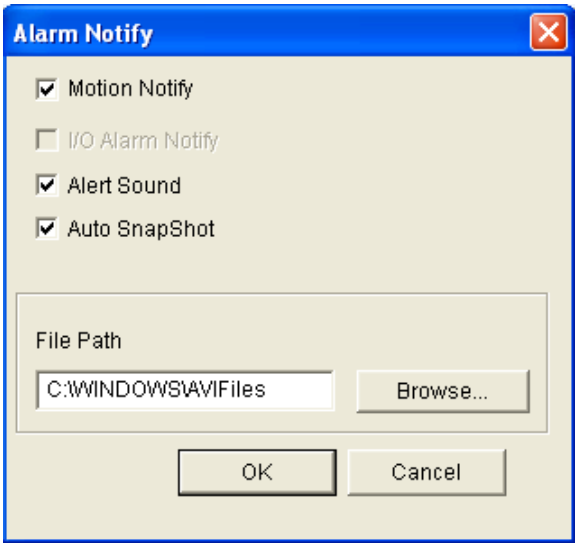


Figure 3-8

- **Motion Notify:** Once motion is detected, the captured images are displayed on the control panel of the Live View window.
- **I/O Alarm Notify:** Once the input device is triggered, the captured images are displayed on the control panel of the Live View window. For this function to work, the Administrator needs to install the input the device properly. *See 4.2.1 Input Setting*. Note this function is not available for **GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R**.
- **Alert Sound:** Activates the computer alarm on motion.
- **Auto Snapshot:** The snapshot of live video is taken every 5 seconds on motion.

- **File Path:** Assigns a file path to save the snapshots.

3.7 Video and Audio Configuration

You can enable the microphone and speaker for two-way audio communication and adjust the set the number of frames to keep for live view buffer.

Click the **Show System Menu** button (No. 8, Figure 3-2), and select **Video and Audio Configuration**.

- **Camera:** Sets the number of frames to keep in live view buffer. Keeping more frames for live view buffer can ensure a smooth live view, but the live view will be delayed for the number of seconds specified.

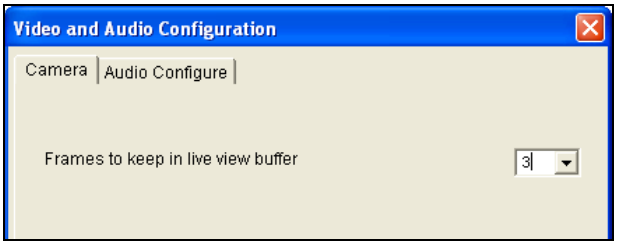


Figure 3-9

- **Audio Configure:** You can enable the microphone and speaker and adjust the audio volume. Note this setting is not available for **GV-IP LPR Camera 5R**.

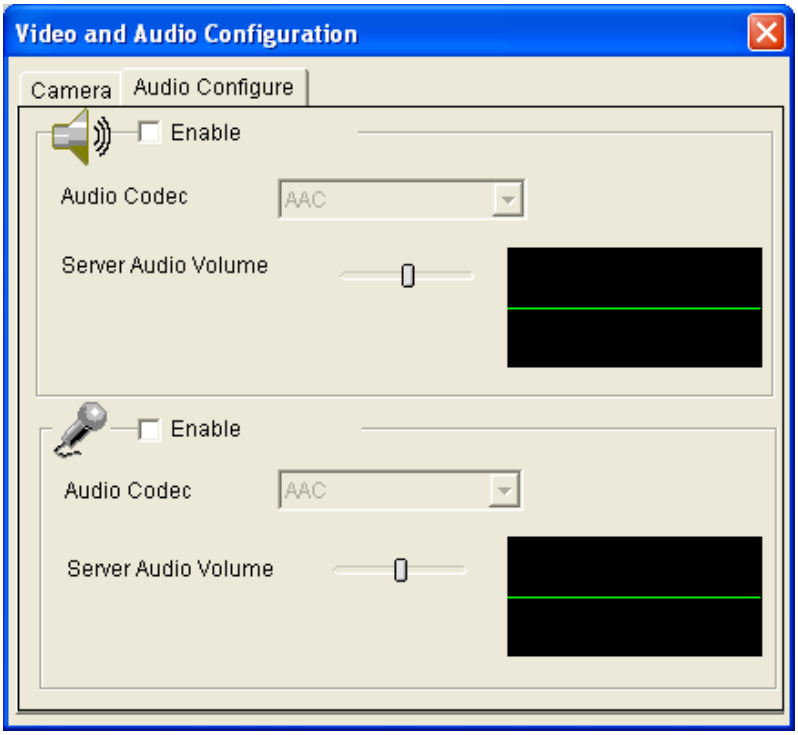


Figure 3-10

3.8 Remote Configuration

You can upgrade the device firmware over the network. Click the **Show System Menu** button (No. 8, Figure 3-2), and select **Remote Config**. The Remote Config dialog box will appear.

[Firmware Upgrade] In this tab, you can upgrade the firmware over the network. For details, see *Chapter 5 Advanced Applications*.

3.9 Camera Name Display

To display the camera name on the image, click the **Show System Menu** button (No. 8, Figure 3-2), and select **Show Camera Name**.

3.10 Image Enhancement

To enhance the image quality of live video, click the **Show System Menu** button (No. 8, Figure 3-2), and select **Image Enhance**. This dialog box appears.

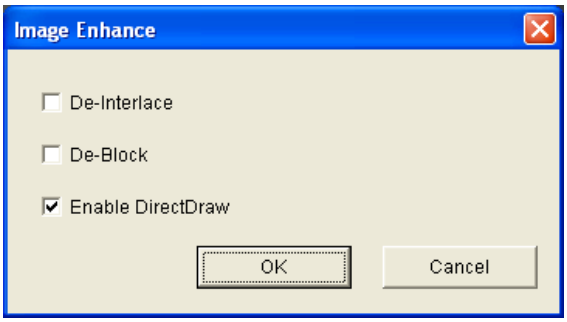


Figure 3-11

- **De-Interlace:** Covert the interlaced video into non-interlaced video.
- **De-Block:** Remove the block-like artifacts from low-quality and highly compressed video.
- **Enable DirectDraw:** Activate the DirectDraw function.

Chapter 4 Administrator Mode

The Administrator can access and configure the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 over the network. The configuration categories include: **Video and Motion**, **Events and Alerts**, **Monitoring**, **Recording Schedule**, **Network** and **Management**.

Figure 4-1

Corresponding Section for Configuration Menu

Find the topic of interest by referring to the indicated section.

4.1 Video and Motion	4.1.1 Video Settings 4.1.2 Motion Detection 4.1.3 Privacy Mask 4.1.4 Text Overlay 4.1.5 Tampering Alarm
4.2 I/O Control	4.2.1 Input Setting 4.2.2 Output Setting
4.3 Events and Alerts	4.3.1 Email 4.3.2 FTP 4.3.3 Center V2 4.3.4 VSM 4.3.5 GV-Video Gateway / GV-Recording Server 4.3.6 RTSP
4.3 Monitoring	4.3.1 GV-Hybrid LPR Camera 20R / 10R 4.3.2 Monitoring Settings
4.5 Network	4.5.1 LAN 4.5.2 Advanced TCP/IP 4.5.3 IP Filtering 4.5.4 SNMP Settings
4.6 Management	4.6.1 Date and Time Settings 4.6.2 User Account 4.6.3 Log Information 4.6.4 Tools 4.6.5 Language

4.1 Video & Motion

The GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 supports dual streams, Streaming 1 and Streaming 2, which allow separate codec and resolutions settings for a single video transmission. In a bandwidth-limited network, such as mobile phone surveillance, this dual-stream feature allows you to view live video in lower resolution and codec (Streaming 2), and record in highest resolution 1280 x 1024 and codec MJPEG (Streaming 1) at the same time.

Comparison between Stream 1 and Stream 2:

<table>
<tr><th>Video Setting Options</th><th>Stream 1</th><th>Stream 2</th></tr>
<tr><td>Video Signal Type</td><td colspan="2">Different codec, resolutions and frame rates can be applied to Stream 1 and 2.</td></tr>
<tr><td>Watermark Setting</td><td rowspan="4">Yes</td><td rowspan="4">Not configurable. Settings in Stream 1 will be automatically applied to Stream 2.</td></tr>
<tr><td>Audio Codec</td></tr>
<tr><td>TV Out Setting</td></tr>
<tr><td>Status LED Control</td></tr>
</table>

4.1.1 Video Settings

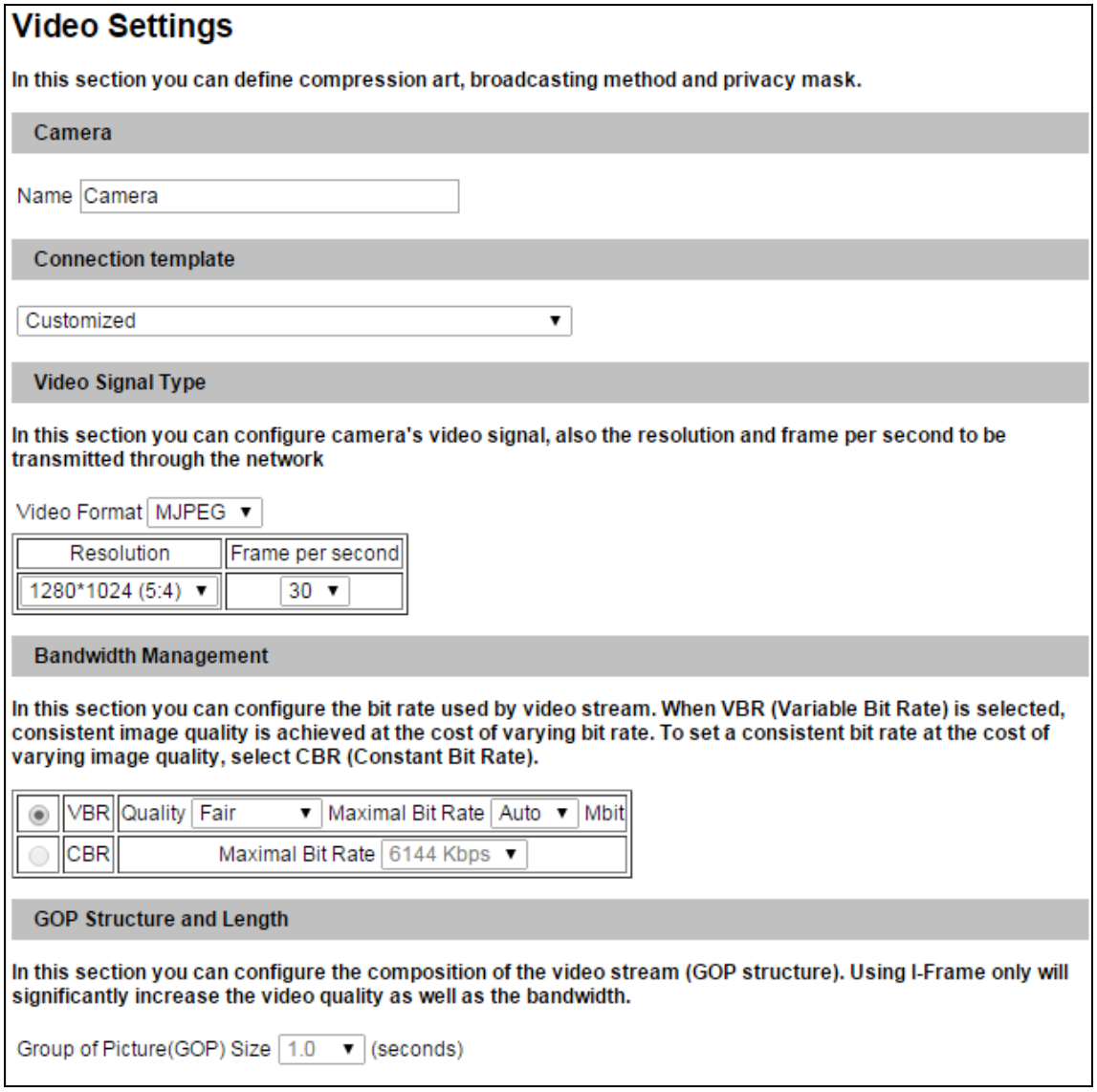

Video Settings
In this section you can define compression art, broadcasting method and privacy mask.
Camera
Name Camera
Connection template
Customized
Video Signal Type
In this section you can configure camera's video signal, also the resolution and frame per second to be transmitted through the network
Video Format MJPEG
Resolution
Frame per second
1280*1024 (5:4)
30
Bandwidth Management
In this section you can configure the bit rate used by video stream. When VBR (Variable Bit Rate) is selected, consistent image quality is achieved at the cost of varying bit rate. To set a consistent bit rate at the cost of varying image quality, select CBR (Constant Bit Rate).
VBR
Quality Fair
Maximal Bit Rate Auto
Mbit
CBR
Maximal Bit Rate 6144 Kbps
GOP Structure and Length
In this section you can configure the composition of the video stream (GOP structure). Using I-Frame only will significantly increase the video quality as well as the bandwidth.
Group of Picture(GOP) Size 1.0
(seconds)

Figure 4-2A

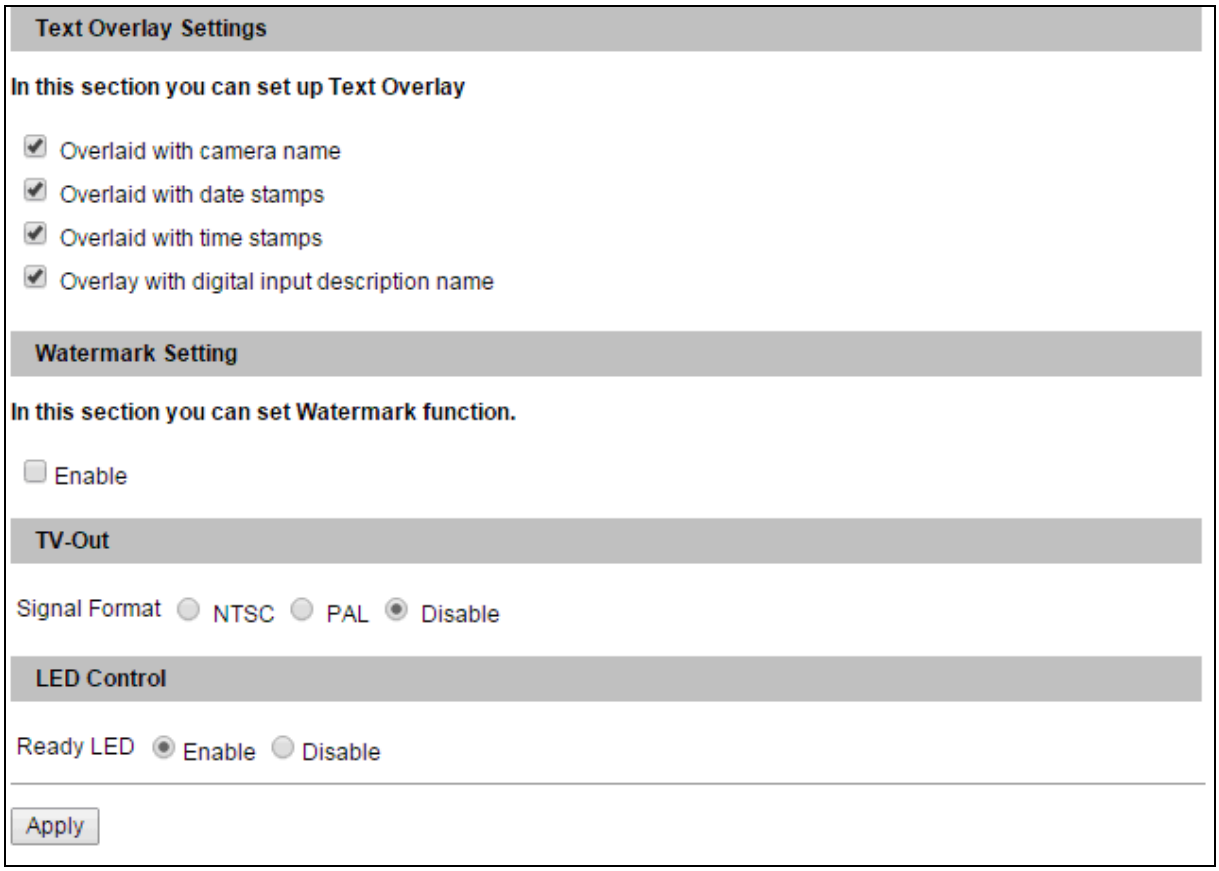


Figure 4-2B

[Name]

Rename the camera. The camera name will appear on the Live View. To display the camera name, see *3.9 Camera Name Display*.

[Connection Template]

Select the type of your network connection. Unless you select **Customized**, this option will automatically bring up the recommended video resolution, frame rate, bandwidth and GOP size.

[Video Signal Type]

Select the codec type, resolution and frame rate. The default codec is **MJPEG**. Choose H.264 or MJPEG for the main stream/sub stream. The supported resolutions are listed blow:

Video Resolution		
Main Stream	**4:3**	1280 x 960, 640 x 480, 320 x 240
	16.9	1280 x 720, 640 x 360, 448 x 252
	5:4	1280 x 1024, 640 x 512, 320 x 256
Sub Stream	**4:3**	640 x 480, 320 x 240
	16.9	640 x 360, 448 x 252
	5:4	640 x 512, 320 x 256

[Bandwidth Management]

When using the H.264 codec, it is possible to configure the bitrate settings to control bandwidth usage.

- **VBR (Variable Bitrate):** The quality of the video stream is kept as constant as possible at the cost of a varying bitrate. The bandwidth is much more efficiently used than a comparable CBR. Set the image quality to one of the 5 standards: **Standard**, **Fair**, **Good**, **Great** and **Excellent**.
- **Maximal Bit Rate:** When the system bitrate exceeds the specified Maximal Bit Rate, the system will automatically lower its bitrate so as not to exceed it. Select one of the bitrates from the drop-down list or select **Auto** if you do not want to enable this function. The default value is 6 MB
- **CBR (Constant Bitrate):** CBR is used to achieve a specific bitrate by varying the quality of the stream. The bitrates available for selection depend on the image resolution.

[GOP Structure and Length]

Set the maximum number of seconds between every key frame.

[Text Overlay Settings]

- **Overlaid with camera name:** Include camera names on live and recorded videos.
- **Overlaid with date stamps:** Include date stamps on live and recorded videos.
- **Overlaid with time stamps:** Include time stamps on live and recorded videos.
- **Overlaid with digital input description name:** Includes the name of the selected input on live and recorded videos. Note this function is not available for **GV-Hybrid LPR Camera 10R /20** and **GV-IP LPR Camera 5R**.

[Watermark Setting]

Enable this option to watermark all recordings. The watermark allows you to verify whether the video has been tampered while it was recorded. See *5.4 Verifying Watermark*.

[TV Out]

Select the signal format for the video output of the camera as either **NTSC** or **PAL**. This function is disabled by default. Note this function is not available for **GV-IP LPR Camera 5R**.

Note: For smooth live view display on TV monitor, the video resolution must be of 1280 x 1024 or lower. If dual streams are enabled, the sub stream must be set at 640 x 480.

[LED Control]

- **Ready LED:** Select **Disable** if you do not wish to use the Status LED. Note this function is not available for **GV-IP LPR Camera 5R**.

[LPR Setting]

- **Setup Mode:** Select **Enable** to keep the brightness of the live view when the camera's cover is removed for focus adjustment. This function can prevent the live view from being darkened when the camera's cover with infrared illuminator is uninstalled. Note this function is not available for **GV-IP LPR Camera 5R and GV-LPC1100**.

Important:

1. When this function is enabled, the text of "Setup Mode" will be overlaid on the live view.
2. After the setup, disable the Setup Mode; otherwise the license plate recognition will not work properly.

4.1.2 Motion Detection

Motion detection is used to generate an alarm whenever movement occurs within the scene. You can configure up to 8 detection zones with different sensitivity values. Create at least one detection zone to enable this function.

Motion Detection
In this section you can define different region(s) for motion detection.
To trigger digital output relay upon motions, be sure to set up the detection area on the Motion Detection page.
2CP 419
Camera
Camera
Sensitivity: 9
Reset
Save
Motion Detection
Ignore environmental changes
Noise Tolerance
Advanced Setting
Please advise which action(s) should be taken when motion detection is activated.
Trigger digital output relay
Output 1
Apply

Figure 4-3

1. Select a sensitivity value using the slider bar. There are 10 sensitivity levels. The higher the value, the more sensitive the camera is to motion. The default sensitivity value is **9**.
2. Define a detection zone by dragging an area on the image. Click **Add** when you are prompted to confirm the setting.
3. To create several areas with different sensitivity values, repeat Steps 1 and 2.
4. Click **Save** to save the above settings.

5. Click **Reset** to clear all the selected areas.
6. For the camera to ignore environmental changes such as rain or snow, select the **Ignore environmental changes**.
7. To reduce video noise when the lighting condition changes, select **Noise Tolerance**.
8. If you want to trigger the alarm output when motion is detected, select **Output 1** and click the **Apply** button. To activate the output settings, you must also start **Input** monitoring manually or by schedule. For related settings, see *4.3.2 Monitoring*.
9. Click the **Apply** button.

4.1.3 Privacy Mask

The Privacy Mask can block out sensitive areas from view, covering the areas with dark boxes in both live view and recorded clips. This feature is ideal for privacy protection on locations with private information, keyboard sequences (e.g. passwords), and any place you would like to keep inaccessible to view.

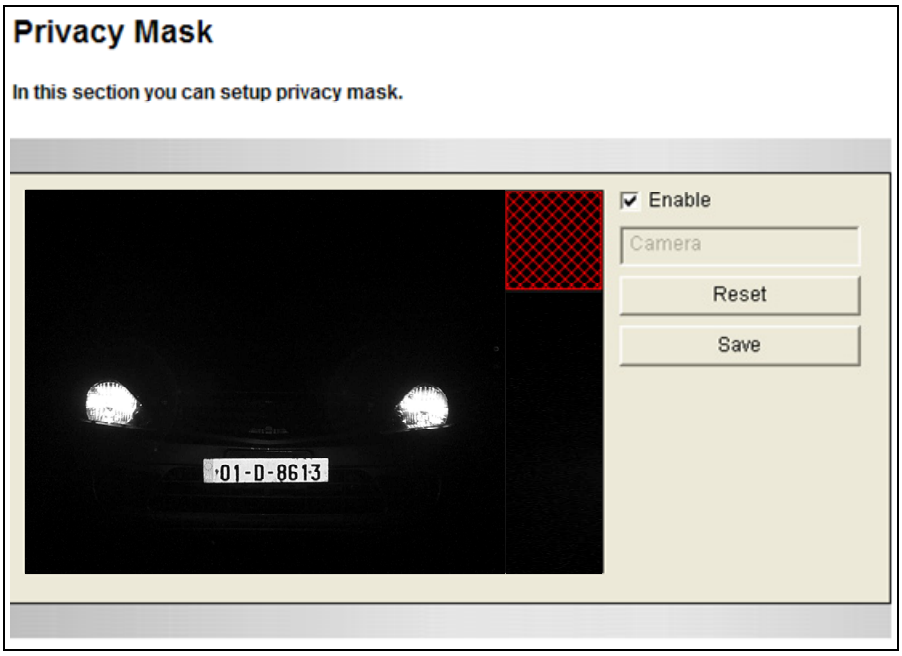


Figure 4-4

1. Select the **Enable** option.
2. Drag the area(s) where you want to block out on the image. Click **Add** when you are prompted to confirm the setting.
3. Click the **Save** button to save all the settings.

4.1.4 Text Overlay

The Text Overlay allows you to overlay any text in any place on the camera view. Up to 16 text messages can be created on one camera view. The overlaid text will be saved in the recordings.

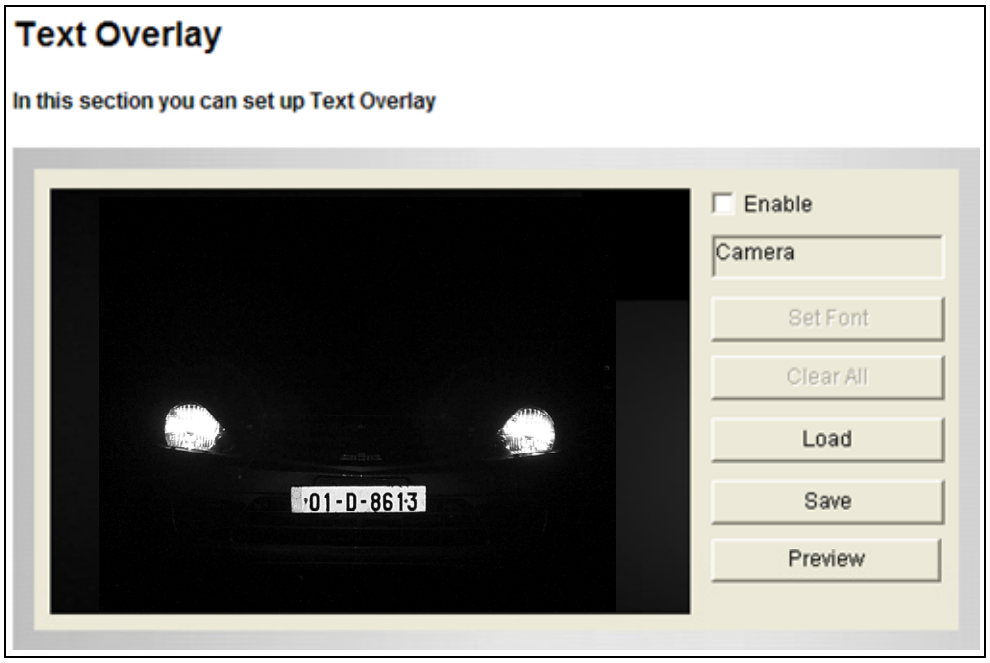


Figure 4-5

1. Select the **Enable** option.
2. Click **Set Font** to set up the font, font style and font size in a pop-up window.
3. Click any place on the image. This dialog box appears.

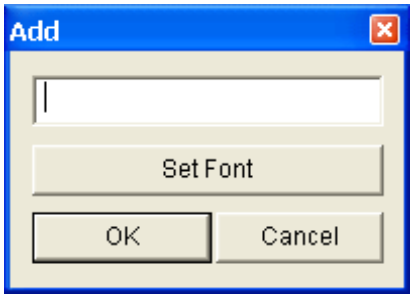


Figure 4-6

4. Type the desired text, and click **OK**. The text is overlaid on the image.
5. Drag the overlaid text to a desired place on the image.
6. Click **Set Font** to modify the font settings.
7. Click **Save** to apply the settings, or click **Load** (Undo) to revert to the last saved setting.
8. Click **Preview** to see how the text will appear on the image. Click **Close** to end the preview.

4.1.5 Tampering Alarm

Note this function is not available for **GV-IP LPR Camera 5R** and **GV-LPC1100**.

The Tampering Alarm is used to detect whether a camera is being physically tampered. An e-mail alarm can be sent when the camera is moved, covered up, or out of focus. Make sure the e-mail settings are set up. For detail, see *4.2.1 E-Mail*.

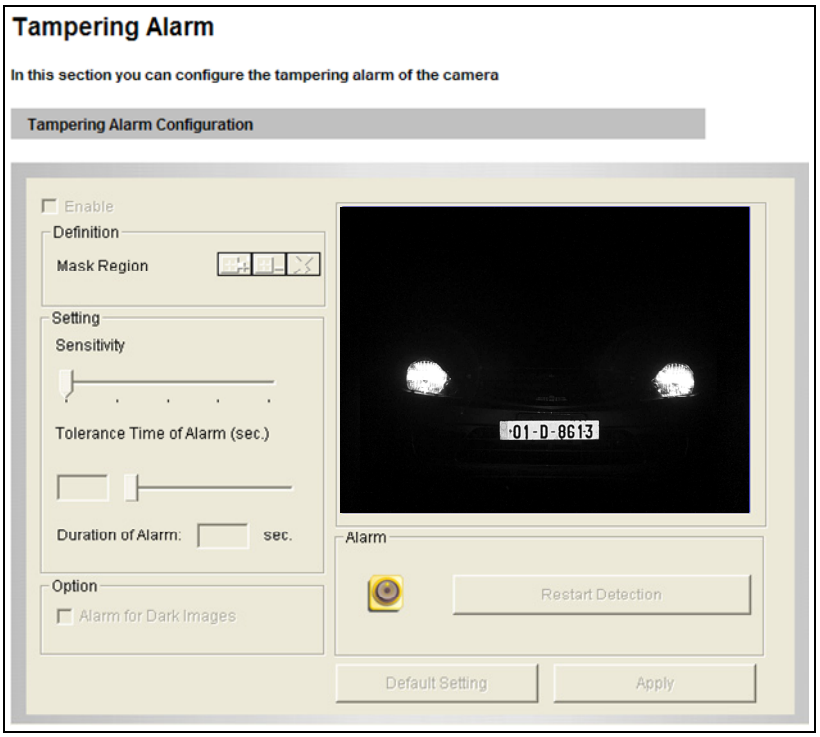


Figure 4-7

To configure the tampering alarm:

1. Select the **Enable** option.
2. If you want the camera to ignore any movement or scene change in certain areas, click the button to drag areas on the camera view.
3. Select the desired detection sensitivity by moving the slider. The higher the value, the more sensitive the camera is to scene changes.
4. In the **Tolerance Time of Alarm** field, specify the time length allowed for scene changes before an e-mail notification is sent.
5. To trigger an alarm when the scene turns dark, e.g. the lens of camera has been covered, select **Alarm for Dark Images**.
6. Click **Apply** to save all the settings.

4.2 Events & Alerts

For motion and tampering events, the Administrator can set up two types of alert:

1. Send a captured image by e-mail or FTP. See *4.2.1 E-Mail* and *4.2.2 FTP*.
2. Notify Center Monitoring Stations such as Center V2, VSM, by video or text alerts.

To enable above alerts, you must also set the following features:

- Motion Detection (See *3.1.2 Motion Detection*)
- For e-mail and FTP alerts, it is required to start monitoring (See *4.3 Monitoring*).

4.2.1 E-mail

When a motion is detected, the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 can send an e-mail alert, containing a captured image to a remote user.

Important: To send e-mail alert upon motion / tampering events, make sure you also enable the Motion Detection / Tampering Alarm function. For setup details, see *3.1.2 Motion Detection* and *3.1.5 Tampering Alarm*.

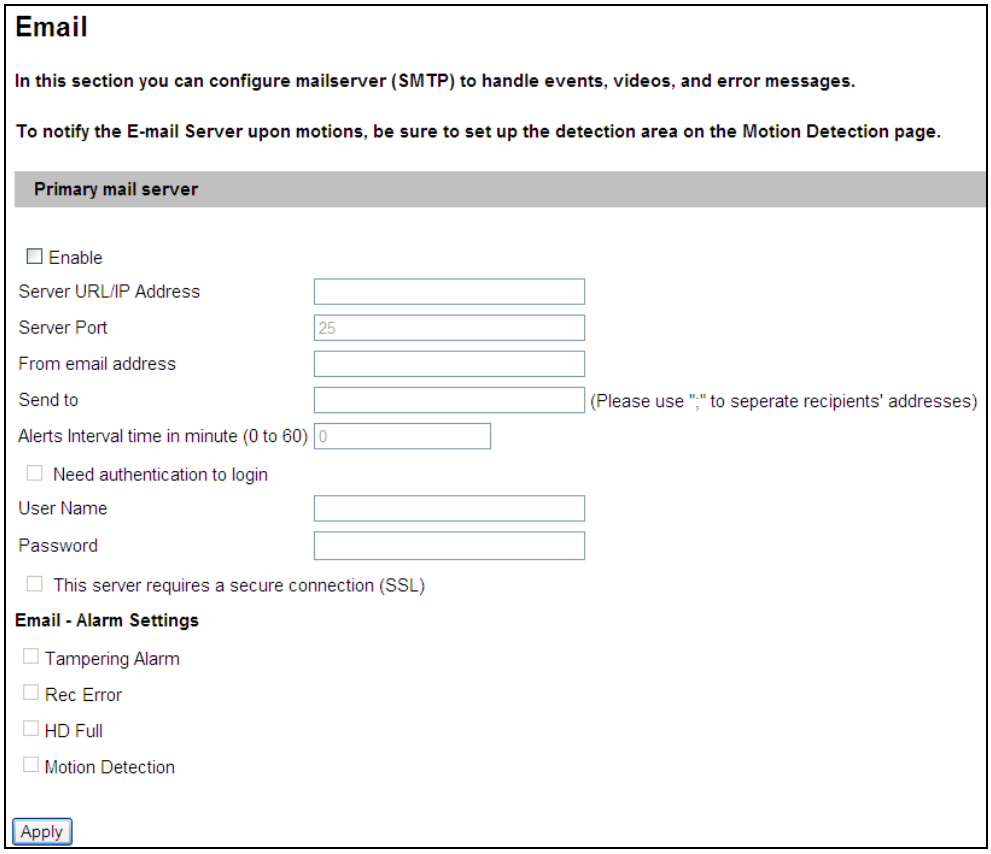

Email
In this section you can configure mailserver (SMTP) to handle events, videos, and error messages.
To notify the E-mail Server upon motions, be sure to set up the detection area on the Motion Detection page.
Primary mail server
Enable
Server URL/IP Address
Server Port
25
From email address
Send to
(Please use ";" to seperate recipients' addresses)
Alerts Interval time in minute (0 to 60)
0
Need authentication to login
User Name
Password
This server requires a secure connection (SSL)
Email - Alarm Settings
Tampering Alarm
Rec Error
HD Full
Motion Detection
Apply

Figure 4-8

To enable the e-mail functions:

1. Select **Enable** to set up e-mail notifications.
2. **Server URL/IP Address:** Type the SMTP Server's URL address or IP address.
3. **Server Port:** Type the SMTP Server's port number or keep the default value **25**.
4. **From email address:** Type the sender's e-mail address.
5. **Send to:** Type the e-mail address(s) you want to send alerts to.

6. **Alerts interval time in minute:** Specify the interval between e-mail alerts. The valid interval is from 0 to 60 minutes. This option is useful for frequent event occurrence. Any event detected during the interval period will be ignored.
7. If the SMTP Server needs authentication, select **Need authentication to login** and type a valid **Username** and **Password** to log in the SMTP server. If the SMTP Server needs a secure connection (SSL), select **This server requires a secure connection**.
8. **Email-Alarm Settings:** Select the event to automatically send an e-mail alert. Note the Tampering Alarm option is not available for **GV-IP LPR Camera 5R** and **GV-LPC1100**.
9. Click **Apply**.
10. In the left menu, select **Monitoring** and click the **Start** button to start monitoring.

4.2.2 FTP

You can also send the captured image to a remote FTP server for alerts.

Important: To send FTP alert upon motions, be sure to set up the detection area on the Motion Detection page. For details, see *4.1.2 Motion Detection*.

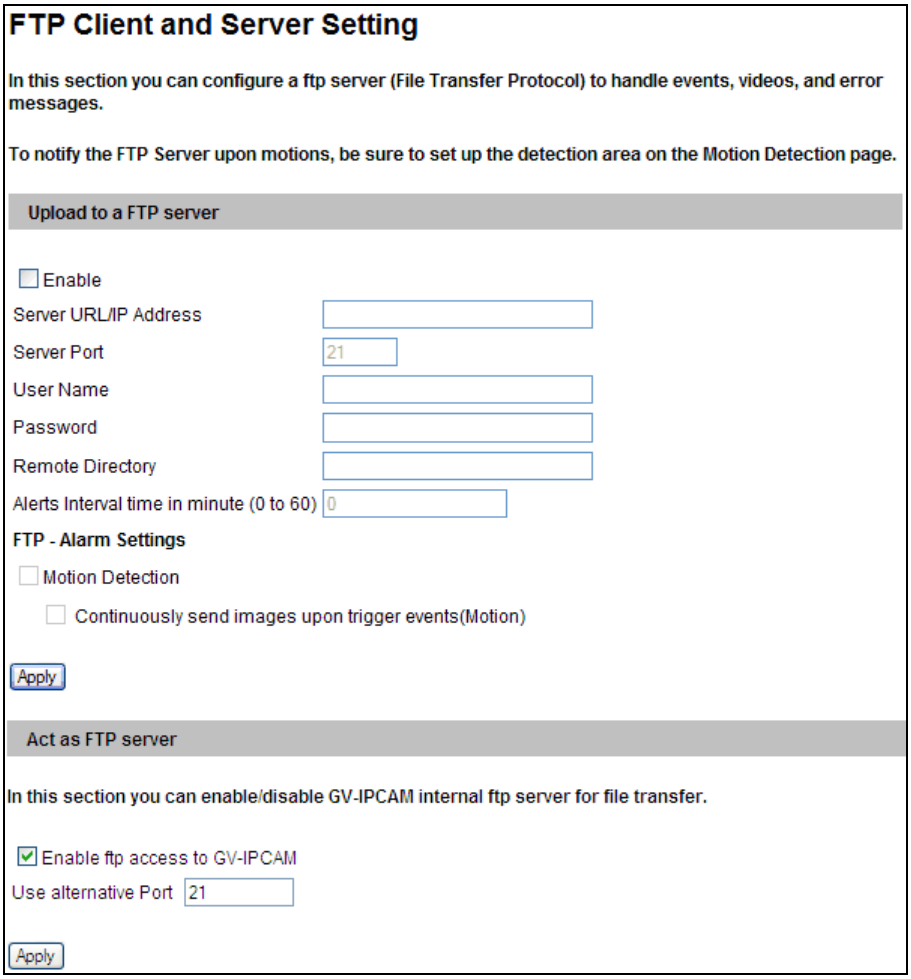

FTP Client and Server Setting
In this section you can configure a ftp server (File Transfer Protocol) to handle events, videos, and error messages.
To notify the FTP Server upon motions, be sure to set up the detection area on the Motion Detection page.
Upload to a FTP server
Enable
Server URL/IP Address
Server Port
21
User Name
Password
Remote Directory
Alerts Interval time in minute (0 to 60)
0
FTP - Alarm Settings
Motion Detection
Continuously send images upon trigger events(Motion)
Apply
Act as FTP server
In this section you can enable/disable GV-IPCAM internal ftp server for file transfer.
Enable ftp access to GV-IPCAM
Use alternative Port
21
Apply

Figure 4-9

[Upload to a FTP server]

1. Select **Enable** to set up the FTP function.
2. **Server URL/IP Address:** Type the URL address or IP address of the FTP Server.
3. **Server Port:** Type the port number of the FTP Server or keep the default value **21**.
4. Type the **Username** and **Password** of the FTP Server.
5. **Remote Directory:** Type the name of the storage folder on the FTP Server.

6. **Alerts interval time in minute:** Specify the interval between FTP alerts. The interval can be between 0 and 60 minutes. The option is useful for frequent event occurrence. Any event triggers during the interval period will be ignored.
7. **FTP-Alarm Settings:** Select **Motion Detection** to automatically send a snapshot to the FTP Server upon motion detection. Select **Continuously send images upon trigger events (Motion)** to upload a series of snapshots to the FTP Server upon motion detection.
8. In the left menu, select **Monitoring** and click the **Start** button to start monitoring.

[Act as FTP server]

1. **Enable FTP access to the GV-IP Cam:** Select to allow the camera to act as an FTP server for users to download AVI files.
2. **Use alternative port:** The default port is set to 21.

4.2.3 Center V2

The central monitoring station Center V2 can be notified of a motion event by live videos and text alerts. Up to **two** Center V2 servers can be connected. For live monitoring through Center V2, you must already have a subscriber account on each of the Center V2 server.

Important: To notify the Center V2 Server upon motion events, be sure to set up the detection area on the Motion Detection page. For details, see *4.1.2 Motion Detection* and *7.1 Center V2*.

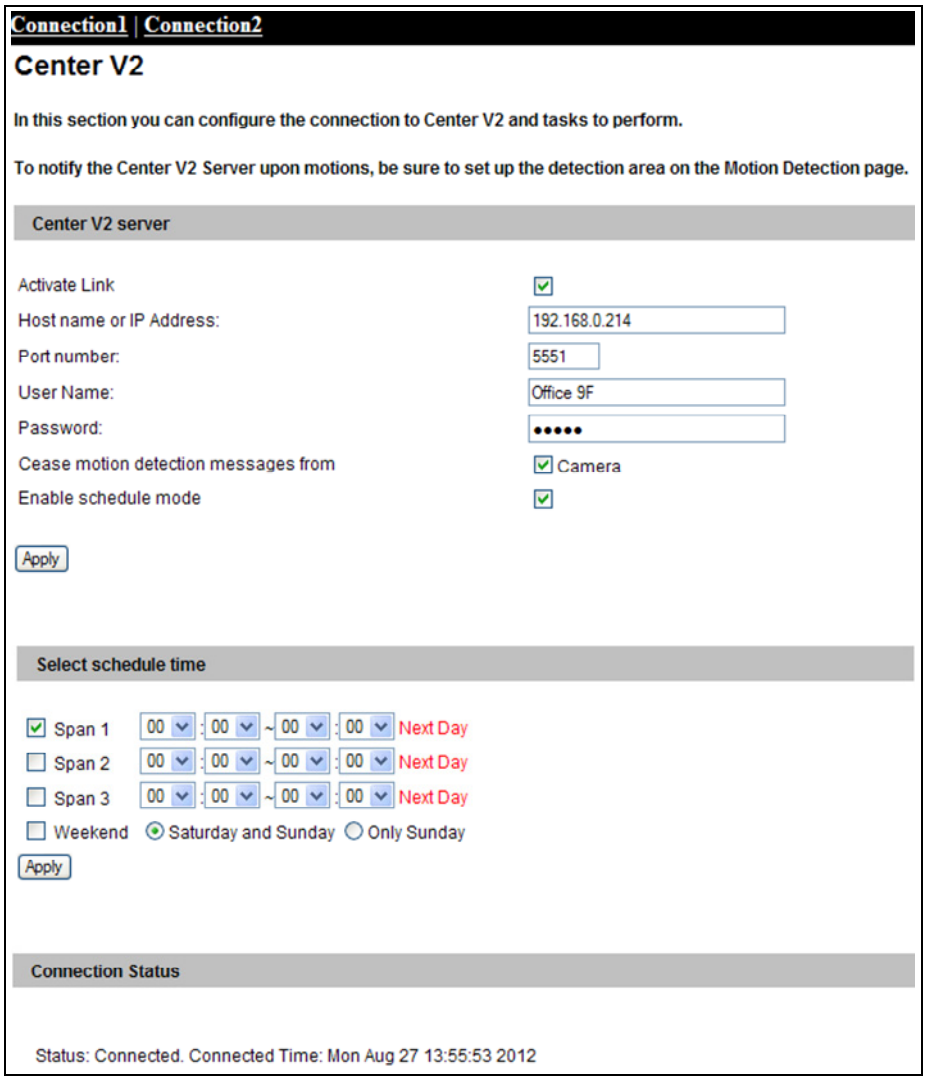


Figure 4-10

To enable the Center V2 connection:

1. **Activate Link:** Enable the monitoring through Center V2.
2. **Host Name or IP Address:** Type the host name or IP address of Center V2.
3. **Port Number:** Match the port to **Port 2** on Center V2. Or keep the default value **5551**. For details, see *8.1 Center V2.*
4. **User Name:** Type a valid user name to log in to Center V2.
5. **Password:** Type a valid password to log in to Center V2.
6. Click **Apply**. The Connection Status should display “Connected” and connected time.
7. To establish connection to the second Center V2, click the **Connection 2** tab and repeat the above steps for setup.

You can also find on this Center V2 settings page:

- **Cease motion detection messages from:** Stops notifying Center V2 of motion detection.
- **Enable schedule mode:** Starts the monitoring through Center V2 based on the schedule you set in the **Select Schedule Time** section.

[Select schedule time]

- **Span 1- Span 3:** Enable recording (upon motion events) at up to 3 different time frames for a day, represented by Span 1 to Span 3.
- **Weekend:** Enable recording (upon motion events) for both Saturday and Sunday or for Sunday only.

4.2.4 Vital Sign Monitor

The central monitoring station VSM can be notified of a motion event by text alerts. Up to **two** Vital Sign Monitor servers can be connected. For live monitoring through VSM, you must already have a subscriber account on each of the VSM server.

Important: To notify the Vital Sign Monitor upon motions, be sure to set up the detection area on the Motion Detection page. For details, see *4.1.2 Motion Detection* and *7.2 VSM*.

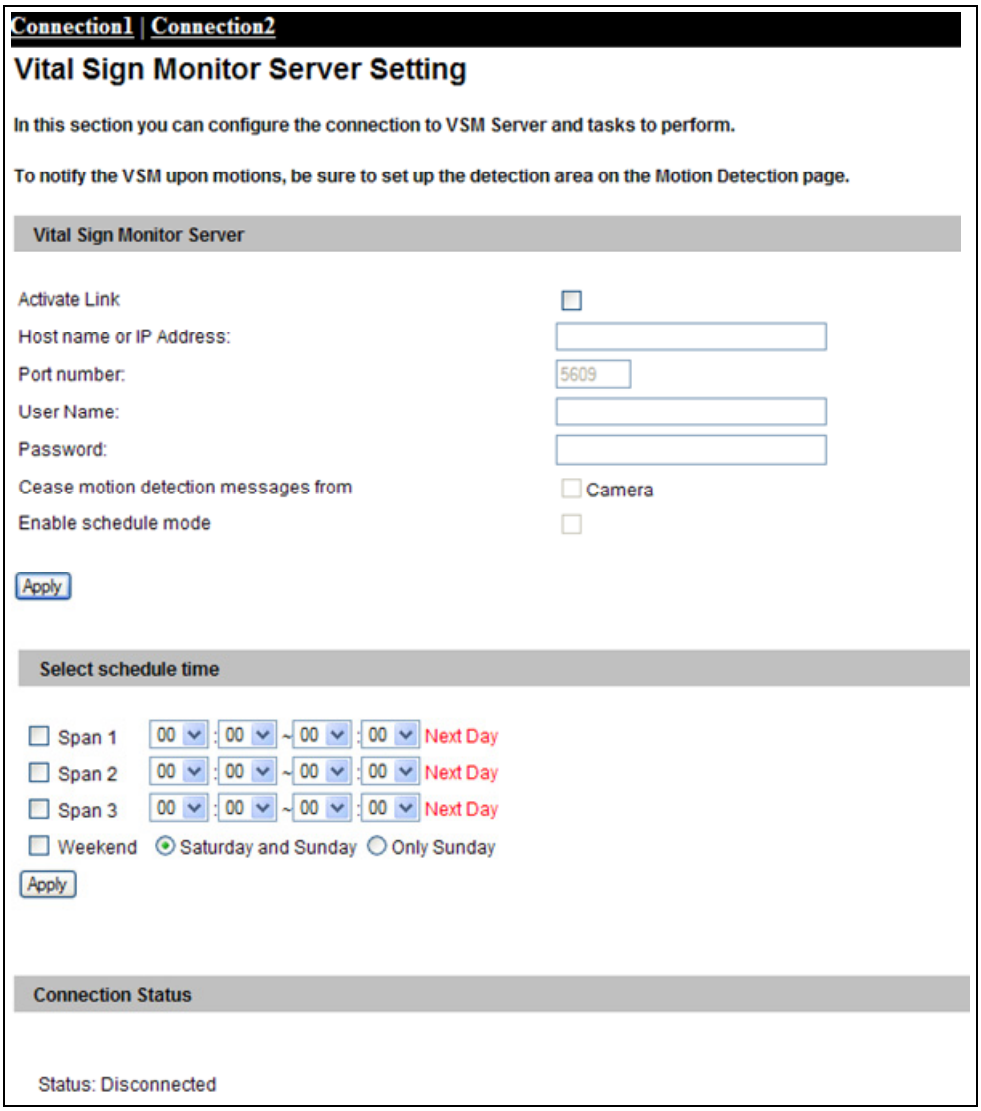


Figure 4-11

To enable the VSM connection:

1. **Activate Link:** Enable the monitoring through VSM.
2. **Host Name or IP Address:** Type the host name or IP address of VSM.
3. **Port Number:** Match the port to **Port 2** on VSM or keep the default value **5609**. For details, see *7.2 VSM.*
4. **User Name:** Type a valid user name to log into VSM.
5. **Password:** Type a valid password to log into VSM.
6. Click **Apply.** The Connection Status should display “Connected” and connected time.
7. To establish connection to the second VSM, click the **Connection 2** tab and repeat the above steps for setup.

These options you can also find on this VSM setting page:

- **Cease motion detection messages from:** Stops notifying VSM of motion detection.
- **Enable schedule mode:** Starts the monitoring through VSM based on the schedule you set in the **Select Schedule Time** section. For schedule setup, refer to *4.2.3 Center V2*.

4.2.5 GV-Video Gateway / GV-Recording Server

The GV-Video Gateway and GV-Recording Server are video streaming servers designed for large-scale video surveillance deployments. The GV-Video Gateway / GV-Recording Server (with recording capability) can receive up to 128 channels from various IP video devices, and distribute up to 300 channels to its clients. With the GV-Video Gateway / GV-Recording Server, the desired frame rate can be ensured while the CPU loading and bandwidth usage of the IP video devices are significantly reduced.

The GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 can be connected with up to two GV-Video Gateway / GV-Recording Server. To send the video images to the GV-Video Gateway or GV-Recording Server, you must already have an account on each of the GV-Video Gateway / GV-Recording Server with the user name and password specified below.

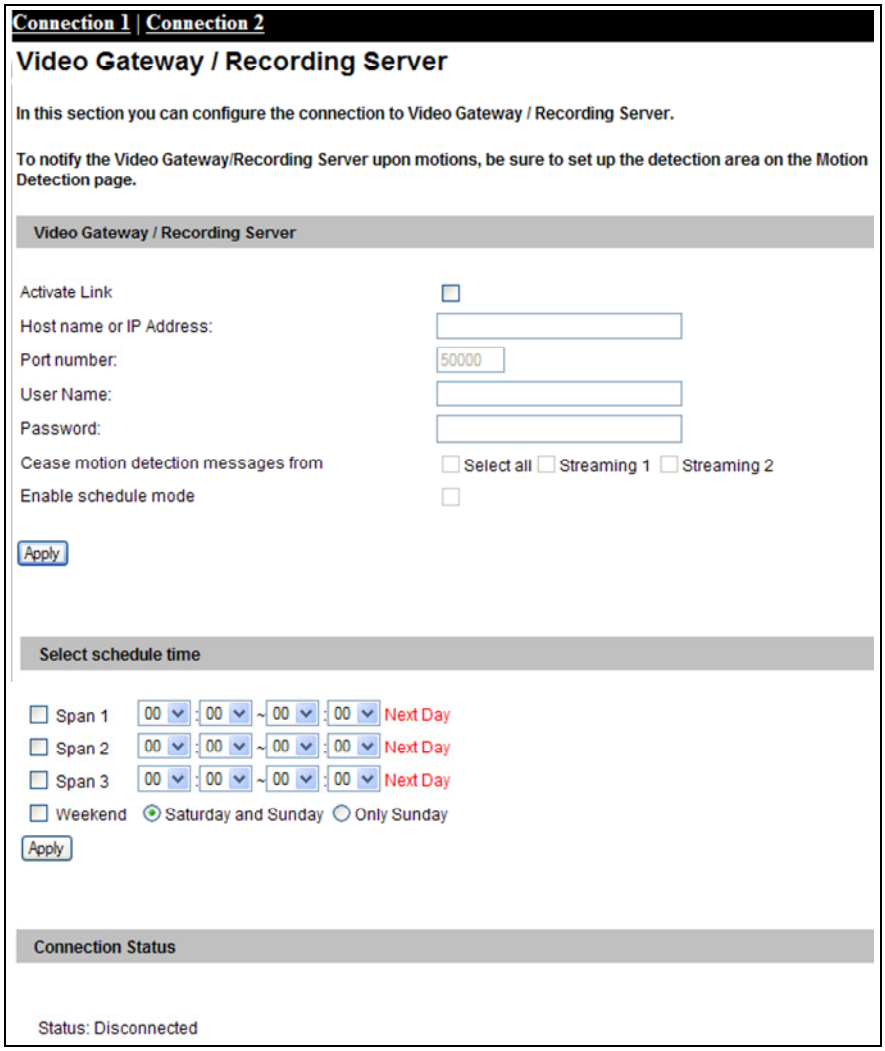


Figure 4-13

To enable connection to GV-Video Gateway / GV-Recording Server:

1. **Activate Link:** Enable the monitoring through GV-Video Gateway / GV-Recording Server.
2. **Host Name or IP Address:** Type the host name or IP address of the GV-Video Gateway / GV-Recording Server.
3. **Port Number:** Match the communication port specified on GV-Video Gateway / GV-Recording Server. Or keep the default value **50000**.
4. **User Name:** Type a valid user name to log into GV-Video Gateway / GV-Recording Server.
5. **Password:** Type a valid password to log into GV-Video Gateway / GV-Recording Server.
6. Click **Apply.** The Connection Status should display “Connected” and connected time.
7. To establish connection to the second GV-Video Gateway / GV-Recording Server, click the **Connection 2** tab and repeat the above steps for setup.

You can also find these options:

- **Enable schedule mode:** Starts the monitoring through GV-Video Gateway / GV-Recording Server based on the schedule you set in the **Select Schedule Time** section. For schedule setup, refer to *4.2.3 Center V2*.
- **Cease motion detection messages from:** Stops notifying GV-Video Gateway / GV-Recording Server of motion events.

4.2.6 RTSP

The RTSP Server enables video and audio streaming to your 3G-enabled mobile phone.

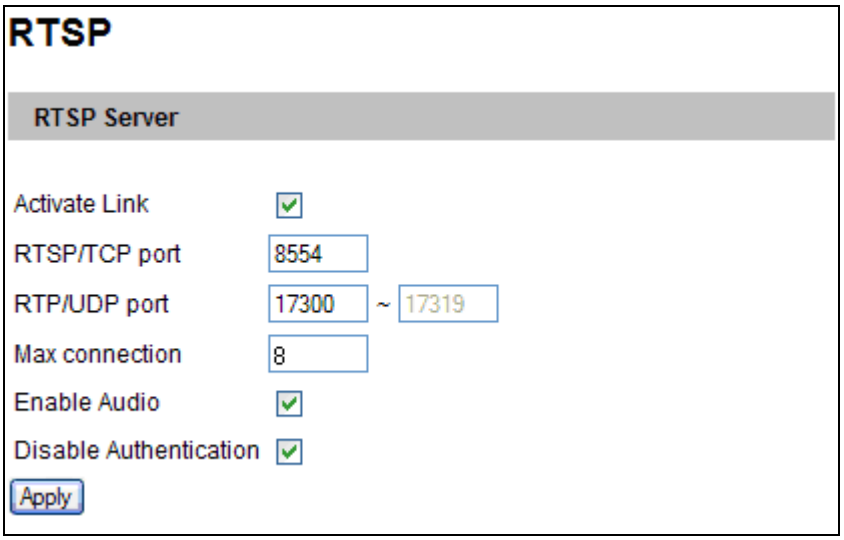


Figure 4-15

- **Activate Link:** Enable the RTSP / 3GPP service.
- **RTSP/TCP Port:** Keep the default value **8554**, or modify it if necessary.
- **RTP/UDP Port:** Keep the default range from **17300** to **17319**, or modify it if necessary. The number of ports for use is limited to 20.
- **Max Connection:** Set the maximum number of RTSP and 3GPP connections to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100. The maximum value is **8**.
- **Enable Audio:** This option is enabled by default. Select to enable audio streaming through RTSP. Note this function is not available for **GV-IP LPR Camera 5R**.
- **Disable Authentication:** Authentication is disabled by default, with which the ID and password of the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 are not required when accessing live view through the RTSP command.

For details on remote monitoring with mobile phones, see *Smart Device Connection*, Chapter 8. For RTSP command, see *Appendix B RTSP Protocol Support*.

4.3 Monitoring

Configure the monitoring settings for GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

4.3.1 GV-Hybrid LPR Camera 20R / 10R

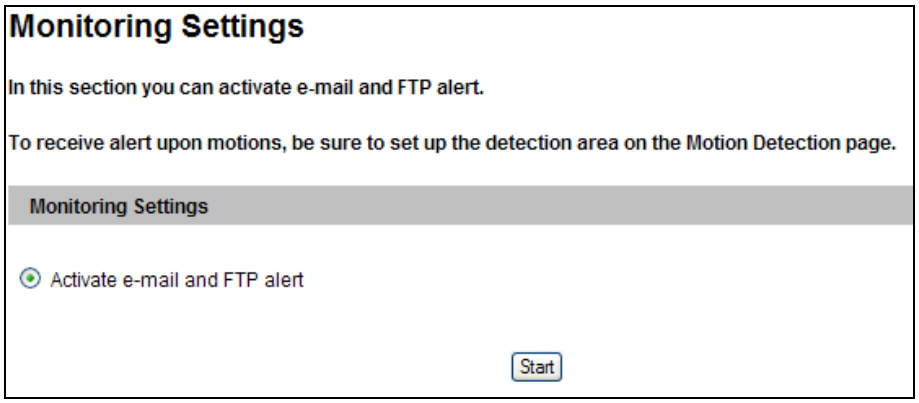

Monitoring Settings
In this section you can activate e-mail and FTP alert.
To receive alert upon motions, be sure to set up the detection area on the Motion Detection page.
Monitoring Settings
Activate e-mail and FTP alert
Start

Figure 4-16

[Activate e-mail and FTP alert] Allows the camera to send e-mail and/or FTP alert upon motion events. Select this option and click the **Start** button.

4.3.2 Monitoring Settings

You can start monitoring manually, by schedule or by input trigger. Note this function is not available for **GV-IP LPR Camera 5R**.

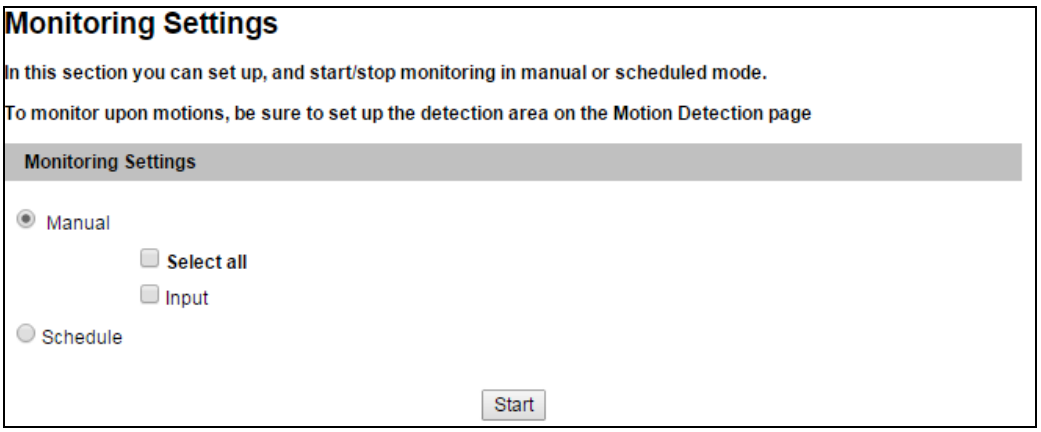

Monitoring Settings
In this section you can set up, and start/stop monitoring in manual or scheduled mode.
To monitor upon motions, be sure to set up the detection area on the Motion Detection page
Monitoring Settings
Manual
Select all
Input
Schedule
Start

Figure 4-17

[Manual] Manually activates motion detection and I/O monitoring. Select one of the following options and then click the **Start** button.

- **Select all**: Manually starts both motion detection and I/O monitoring.
- **Input**: Note this function is only supported for GV-LPC1100. Manually starts I/O monitoring. When the sensor input is triggered, its associated camera and output will be activated for recording and alerting.

[Schedule] The system starts motion detection and I/O monitoring according to the schedule you have set.

4.4 Network

The Network section includes some basic but important network configurations that enable the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 to be connected to a TCP/IP network.

4.4.1 LAN Configuration

According to your network environment, select among Static IP, DHCP and PPPoE.

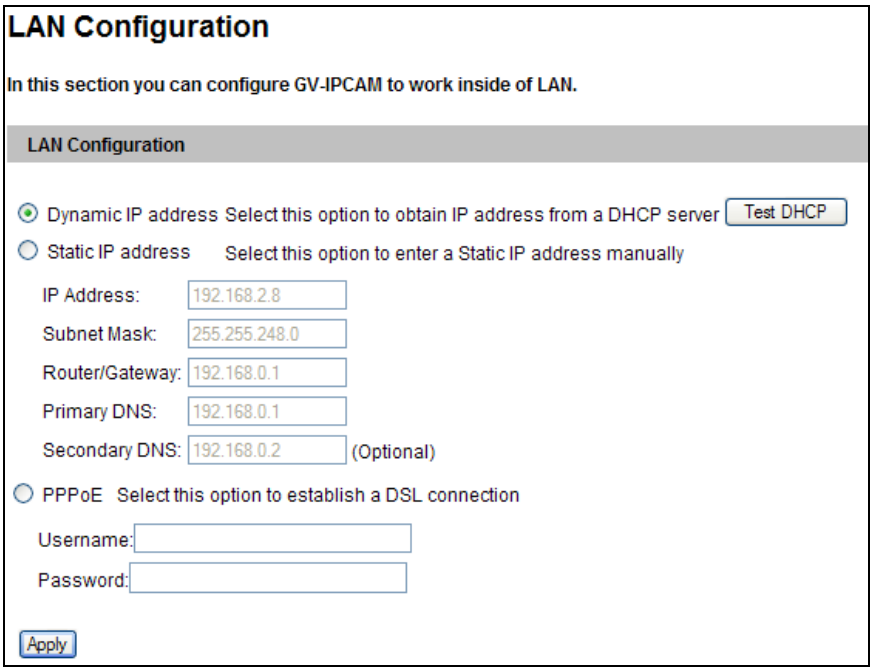

LAN Configuration
In this section you can configure GV-IPCAM to work inside of LAN.
LAN Configuration
Dynamic IP address Select this option to obtain IP address from a DHCP server
Test DHCP
Static IP address Select this option to enter a Static IP address manually
IP Address: 192.168.2.8
Subnet Mask: 255.255.248.0
Router/Gateway: 192.168.0.1
Primary DNS: 192.168.0.1
Secondary DNS: 192.168.0.2 (Optional)
PPPoE Select this option to establish a DSL connection
Username:
Password:
Apply

Figure 4-18

[LAN Configuration]

- **Dynamic IP address:** The network environment has a DHCP server which will automatically assign a dynamic IP address to the camera. Click the **Test DHCP** to see the currently assigned IP address or look up the address using GV-IP Device Utility.
- **Static IP address:** Assign a static IP or fixed IP to the camera. Type the camera's IP address, Subnet Mask, Router/Gateway, Primary DNS server and Secondary DNS server.

Parameters	Default
IP address	192.168.0.10
Subnet Mask	255.255.255.0
Router/Gateway	192.168.0.1
Primary DNS server	192.168.0.1
Secondary DNS server	192.168.0.2

- **PPPoE:** The network environment is xDSL connection. Type the Username and Password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, first use the DDNS function to obtain a domain name linking to the camera's changing IP address.

For details on Dynamic DNS Server Settings*, see 4.5.2 Advanced TCP/IP.*

4.4.2 Advanced TCP/IP

This section introduces the advanced TCP/IP settings, including DDNS Server, HTTP port, streaming port and UPnP.

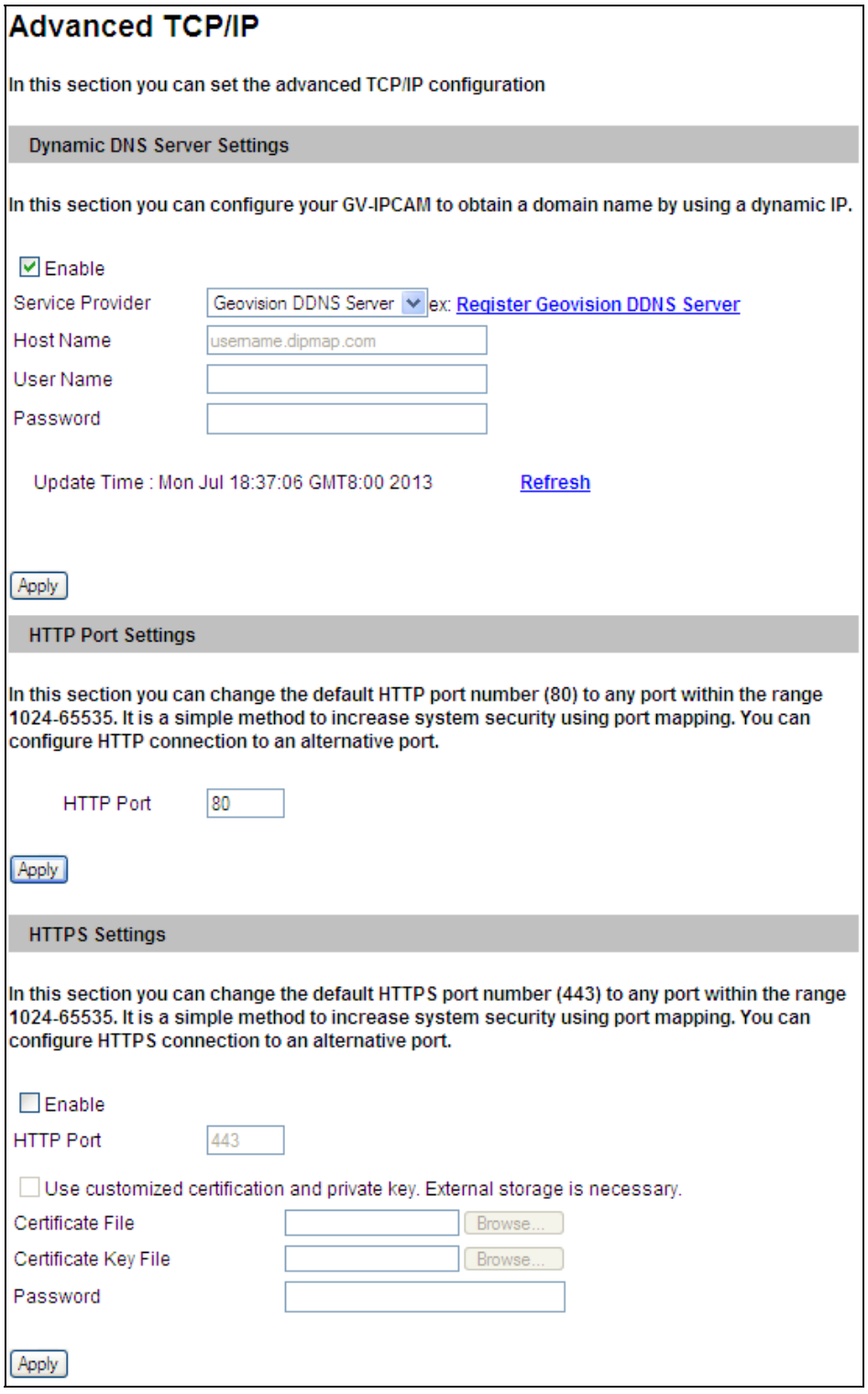

Advanced TCP/IP
In this section you can set the advanced TCP/IP configuration
Dynamic DNS Server Settings
In this section you can configure your GV-IPCAM to obtain a domain name by using a dynamic IP.
Enable
Service Provider
Geovision DDNS Server
ex: Register Geovision DDNS Server
Host Name
username.dipmap.com
User Name
Password
Update Time : Mon Jul 18:37:06 GMT8:00 2013
Refresh
Apply
HTTP Port Settings
In this section you can change the default HTTP port number (80) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTP connection to an alternative port.
HTTP Port
80
Apply
HTTPS Settings
In this section you can change the default HTTPS port number (443) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTPS connection to an alternative port.
Enable
HTTP Port
443
Use customized certification and private key. External storage is necessary.
Certificate File
Browse...
Certificate Key File
Browse...
Password
Apply

Figure 4-19A

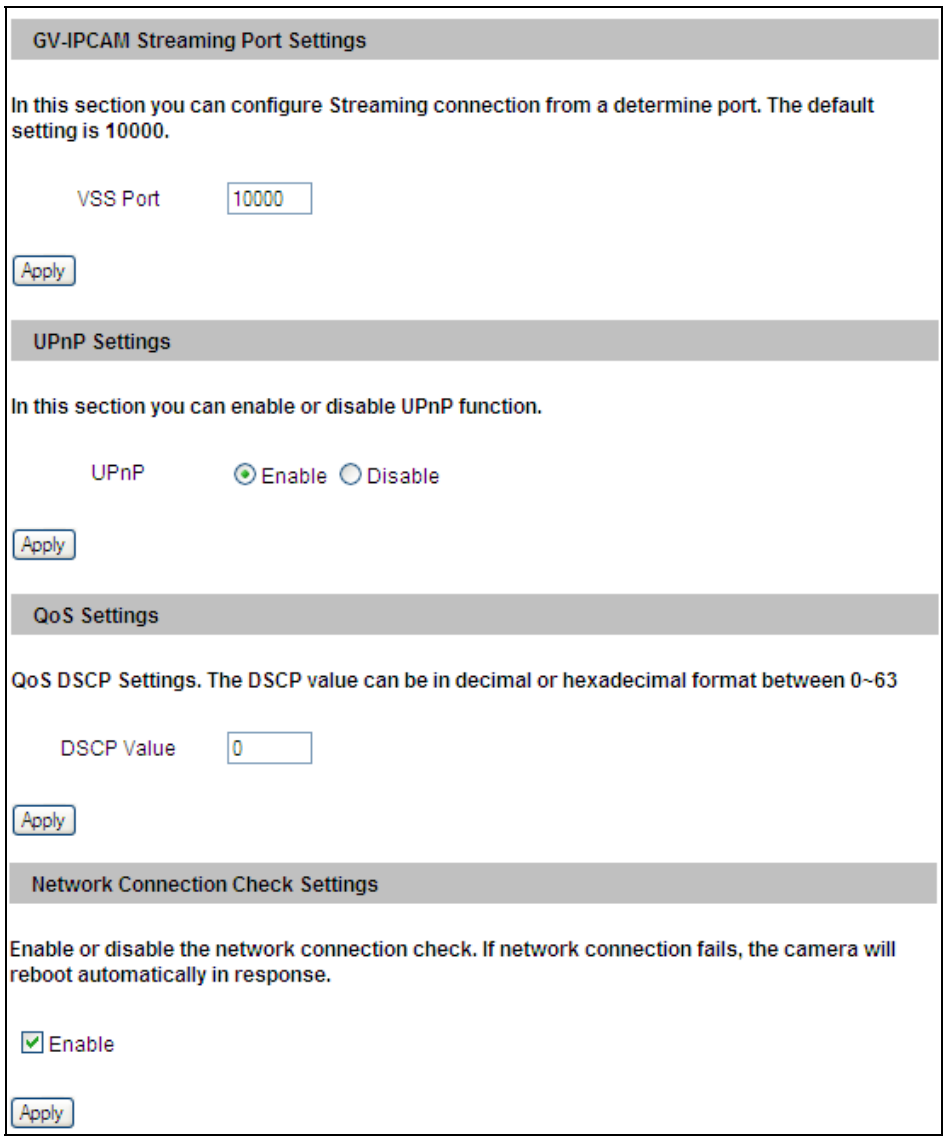

GV-IPCAM Streaming Port Settings
In this section you can configure Streaming connection from a determine port. The default setting is 10000.
VSS Port
10000
Apply
UPnP Settings
In this section you can enable or disable UPnP function.
UPnP
Enable
Disable
Apply
QoS Settings
QoS DSCP Settings. The DSCP value can be in decimal or hexadecimal format between 0~63
DSCP Value
0
Apply
Network Connection Check Settings
Enable or disable the network connection check. If network connection fails, the camera will reboot automatically in response.
Enable
Apply

Figure 4-19B

[Dynamic DNS Server Settings]

DDNS (Dynamic Domain Name System) provides a convenient way of accessing the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 when using a dynamic IP. DDNS assigns a domain name to the camera, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed.

Before enabling the DDNS function, you should apply for a Host Name from the DDNS service provider's website. There are 2 providers listed in the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100: GeoVision DDNS Server and DynDNS.org.

To enable the DDNS function:

1. **Enable:** Enable the DDNS function.
2. **Service Provider:** Select the DDNS service provider you have registered with.
3. **Host Name:** Type the host name used to link to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100. For the users of GeoVision DDNS Server, it is unnecessary to fill the field because the system will detect the host name automatically.
4. **User Name:** Type the user name used to enable the service from the DDNS.
5. **Password:** Type the password used to enable the service from the DDNS.
6. Click **Apply**.

[HTTP Port Settings]

The HTTP port enables connecting the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 to the Web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port **80** to a different port one within the range of **1024** through to **65535**.

[HTTPS Settings]

By enabling the Hypertext Transfer Protocol Secure (HTTPS) settings, you can access the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 through a secure protocol. Note the customized certification function is currently not supported in **GV-IP LPR Camera 5R**.

[Camera Streaming Port Settings]

The VSS port enables connecting the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 to the GV-System. The default setting is **10000**.

[UPnP Settings]

UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among networking equipment, software and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. It means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Enabling this function, you can connect to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 directly by clicking on the camera listed in the network devices table. This function is enabled by default.

[QoS Settings]

The Quality of Service (QoS) is a bandwidth control mechanism that guarantees delay-sensitive data flows such as voice and video streams, obtain a certain amount of bandwidth to keep the streaming smooth.

To apply QoS to GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, all network routers must support QoS and QoS must be enabled on these devices. To enable the QoS on the camera, enter a Differentiated Services Code Point (DSCP) value. This value is a field in an IP packet that enables different levels of services for the network traffic. When the video stream from GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 reaches a router, the DSCP value will tell the router what service level should be applied, e.g. the bandwidth amount. This value ranges from 0 to 63 in decimal format. The default value is 0 which means QoS is disabled. Click **Apply** to finish.

[Network Connection Check Settings]

When the network connection check is enabled, the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 will check for Internet connection and reboots automatically when it is disconnected from the Internet. This function is enabled by default.

4.4.3 IP Filtering

The Administrator can set IP filtering to restrict access to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

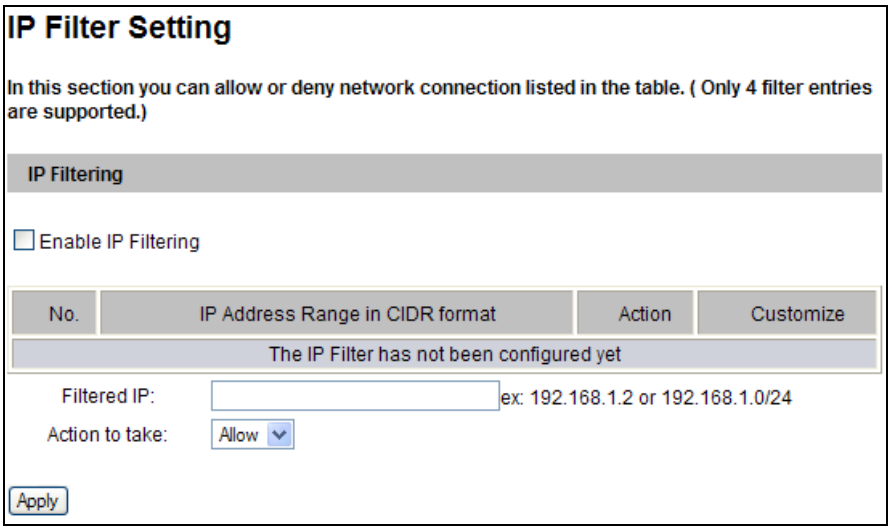

IP Filter Setting
In this section you can allow or deny network connection listed in the table. (Only 4 filter entries are supported.)
IP Filtering
Enable IP Filtering
No.
IP Address Range in CIDR format
Action
Customize
The IP Filter has not been configured yet
Filtered IP:
ex: 192.168.1.2 or 192.168.1.0/24
Action to take:
Allow
Apply

Figure 4-20

To enable the IP Filter function:

1. **Enable IP Filtering:** Enable the IP Filtering function.
2. **Filtered IP:** Type the IP address from which you want to restrict the access.
3. **Action to take:** Select the action of **Allow** or **Deny** to be taken by the IP address(es) you have specified.
4. Click **Apply**.

4.4.4 SNMP Settings

The Simple Network Management Protocol (SNMP) allows you to monitor the status of the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 through SNMP network management software.

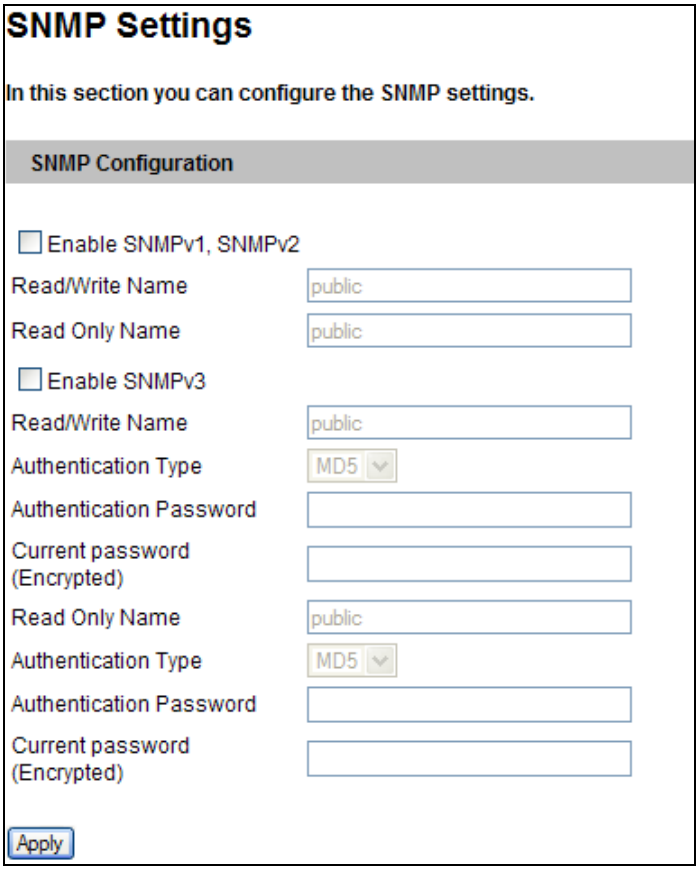


Figure 4-21

To allow management of SNMP software:

1. Select **Enable SNMPv1 SNMPv2c** to enable the function.
2. To enable access to **Read/Write Name**, type a community string. This will serve as a password to allow read and write access to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GP-LPC1100 from the SNMP software.
3. To enable **Read Only Name**, type a community string to allow read-only access to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 from the SNMP software.
4. For a more secured connection, select **Enable SNMPv3** to enable SNMP version 3.
5. To enable access to **Read/Write Name**, type a community string.
6. Select an **Authentication Type** to be used for SNMP requests.

7. Type the **Authentication Password** and **Current Password (Encrypted)**. You will need to type these passwords in the SNMP software to be able to access the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R/ GP-LPC1100.
8. To enable access to **Read Only Name**, type a community string to allows read-only access to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GP-LPC1100, and set up the **Authentication Type**, **Authentication Password** and the **Current Password (Encrypted)**.
9. Click **Apply** to save the settings.

4.5 Management

The Management section includes the settings of data and time and user account. Also you can view the firmware version and execute certain system operations.

4.5.1 Date and Time Settings

The date and time settings are used for date and time stamps on the image.

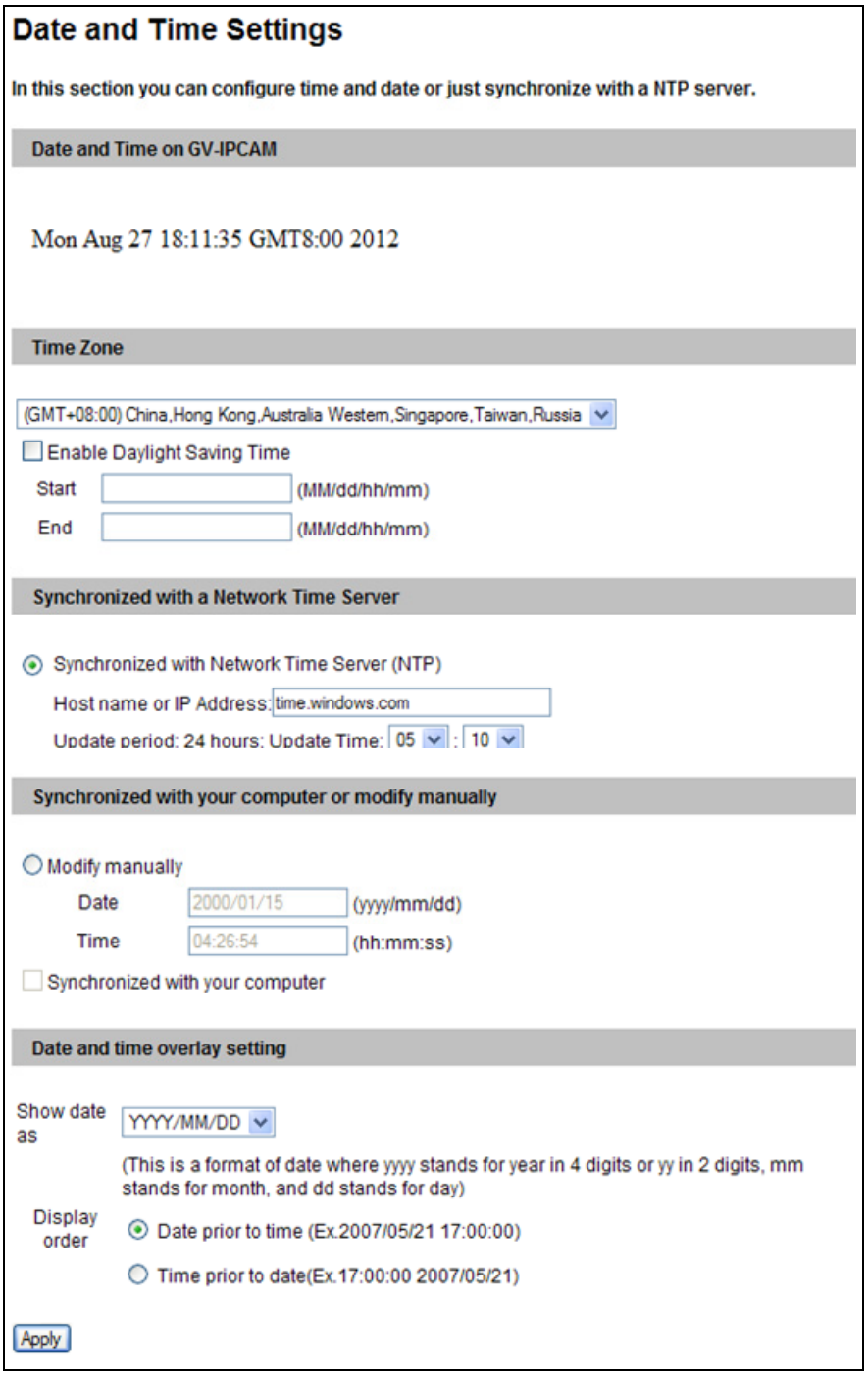

Date and Time Settings
In this section you can configure time and date or just synchronize with a NTP server.
Date and Time on GV-IPCAM
Mon Aug 27 18:11:35 GMT8:00 2012
Time Zone
(GMT+08:00) China,Hong Kong,Australia Western,Singapore,Taiwan,Russia
Enable Daylight Saving Time
Start
(MM/dd/hh/mm)
End
(MM/dd/hh/mm)
Synchronized with a Network Time Server
Synchronized with Network Time Server (NTP)
Host name or IP Address: time.windows.com
Update period: 24 hours; Update Time: 05 : 10
Synchronized with your computer or modify manually
Modify manually
Date
2000/01/15
(yyyy/mm/dd)
Time
04:26:54
(hh:mm:ss)
Synchronized with your computer
Date and time overlay setting
Show date as
YYYY/MM/DD
(This is a format of date where yyyy stands for year in 4 digits or yy in 2 digits, mm stands for month, and dd stands for day)
Display order
Date prior to time (Ex.2007/05/21 17:00:00)
Time prior to date(Ex.17:00:00 2007/05/21)
Apply

Figure 4-22

[Date & Time on GV-IPCAM] Displays the current date and time on the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

[Time Zone] Sets the time zone for local settings. Select **Enable Daylight Saving Time** to automatically adjust the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 for daylight saving time. Type the Start Time and End Time to enable the daylight saving function.

[Synchronized with a Network Time Server] By default, the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 uses the timeserver of time.windows.com to automatically update its internal clock every 24 hours. You can change the host name or IP setting to the timeserver of interest. To change the time of automatic update, use the drop-down lists to specify the time.

[Synchronized with your computer or modify manually] Manually changes the camera date and time or synchronize its date and time with those of the local computer.

[Date and time overlay setting] Select the display format of date and time stamps on the image. For this function to work, you must also enable the **Overlaid with date stamps** and **Overlaid with time stamps** options in Figure 4-2B.

Note: When connecting to GV-System (V8.5.7.0 or later), the Daylight Saving Time of GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 can be synchronized automatically with that of GV-System by enabling **Automatically adjust DST** (Configure button < Camera Install < IP Camera Install).

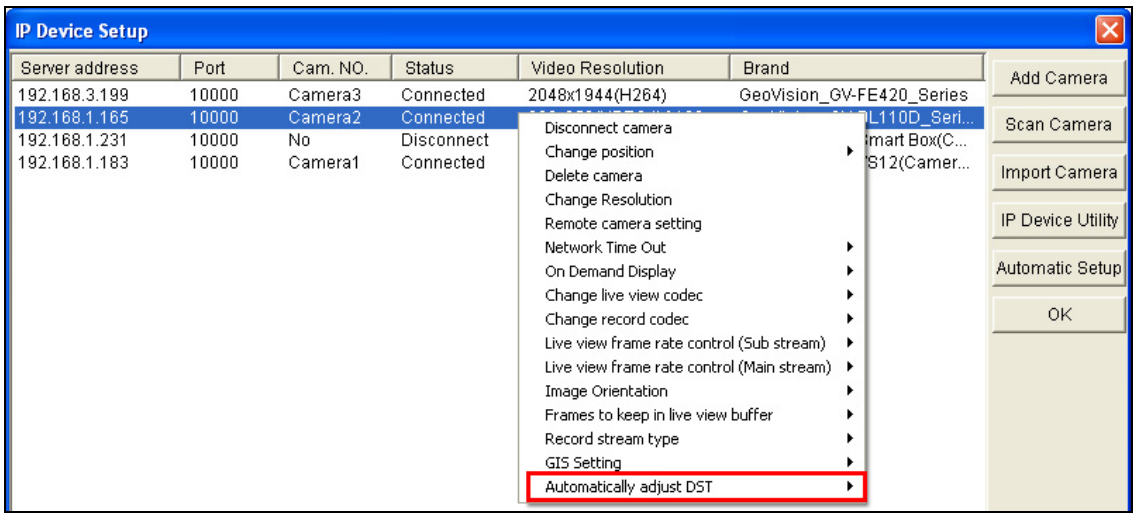


Figure 4-23

4.5.2 User Account

You can change the login name and password of Administrator and Guest accounts.

- The default Administrator login name and password are **admin**.
- The default Guest login name and password are **guest**. To allow a Guest user log in without entering the username and password, select **Disable authentication for guest account**.
- To remain logged in after reboot, select **Disable auto logout after reboot**.

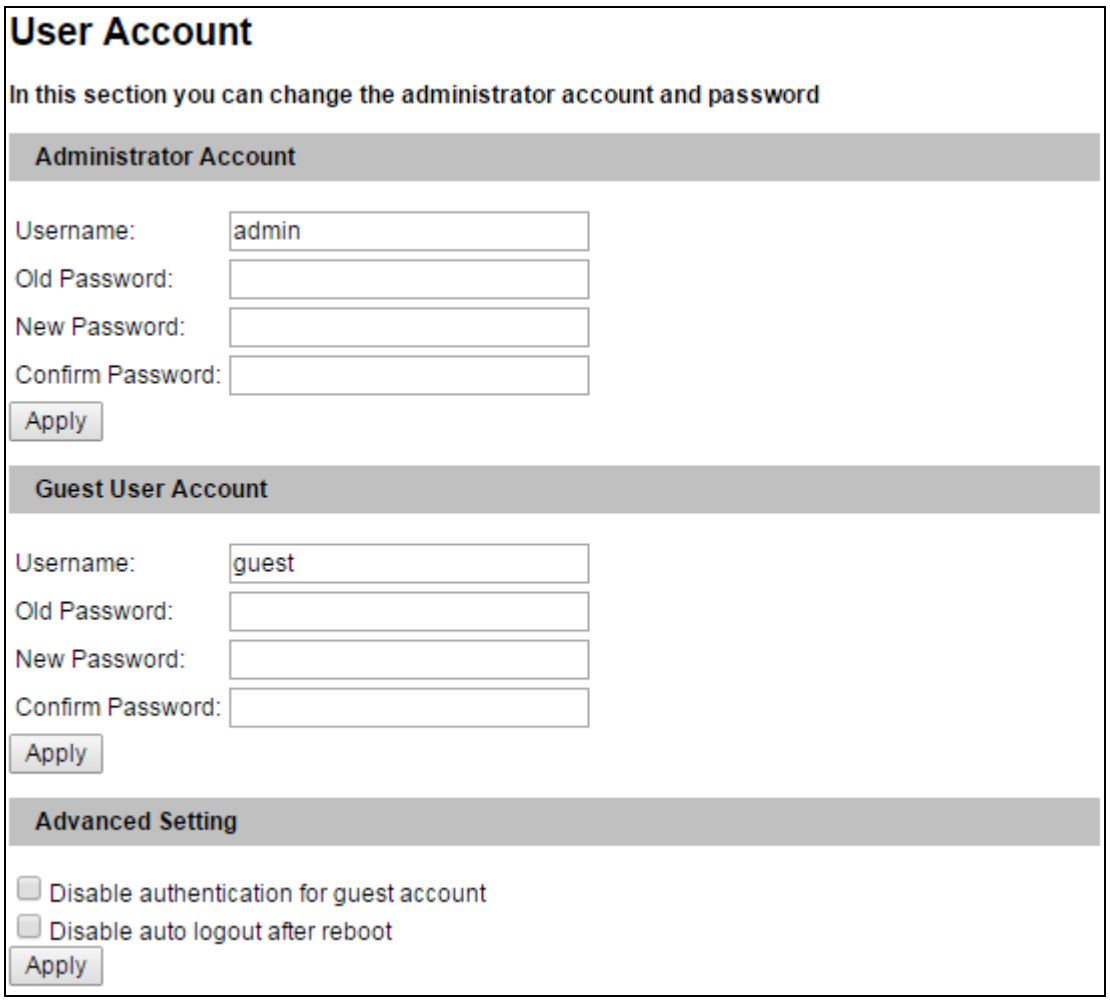


Figure 4-29

Note: You can also access this User Account interface simply by executing a CGI command. See *Appendix A*.

4.5.3 Log Information

The log contains dump data that is used by service personnel for analyzing problems.

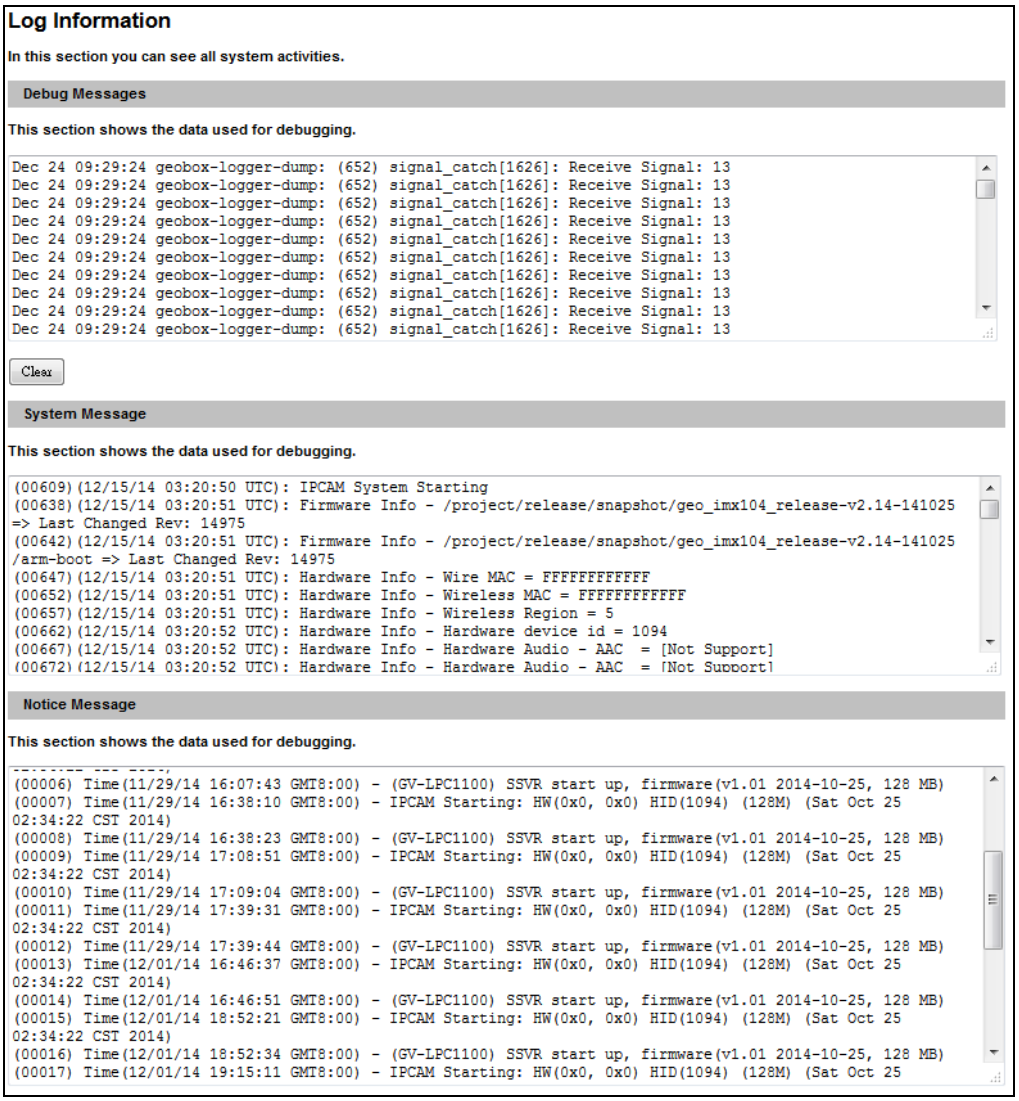


Figure 4-30

4.5.4 Tools

This section allows you to execute certain system operations and view the firmware version.

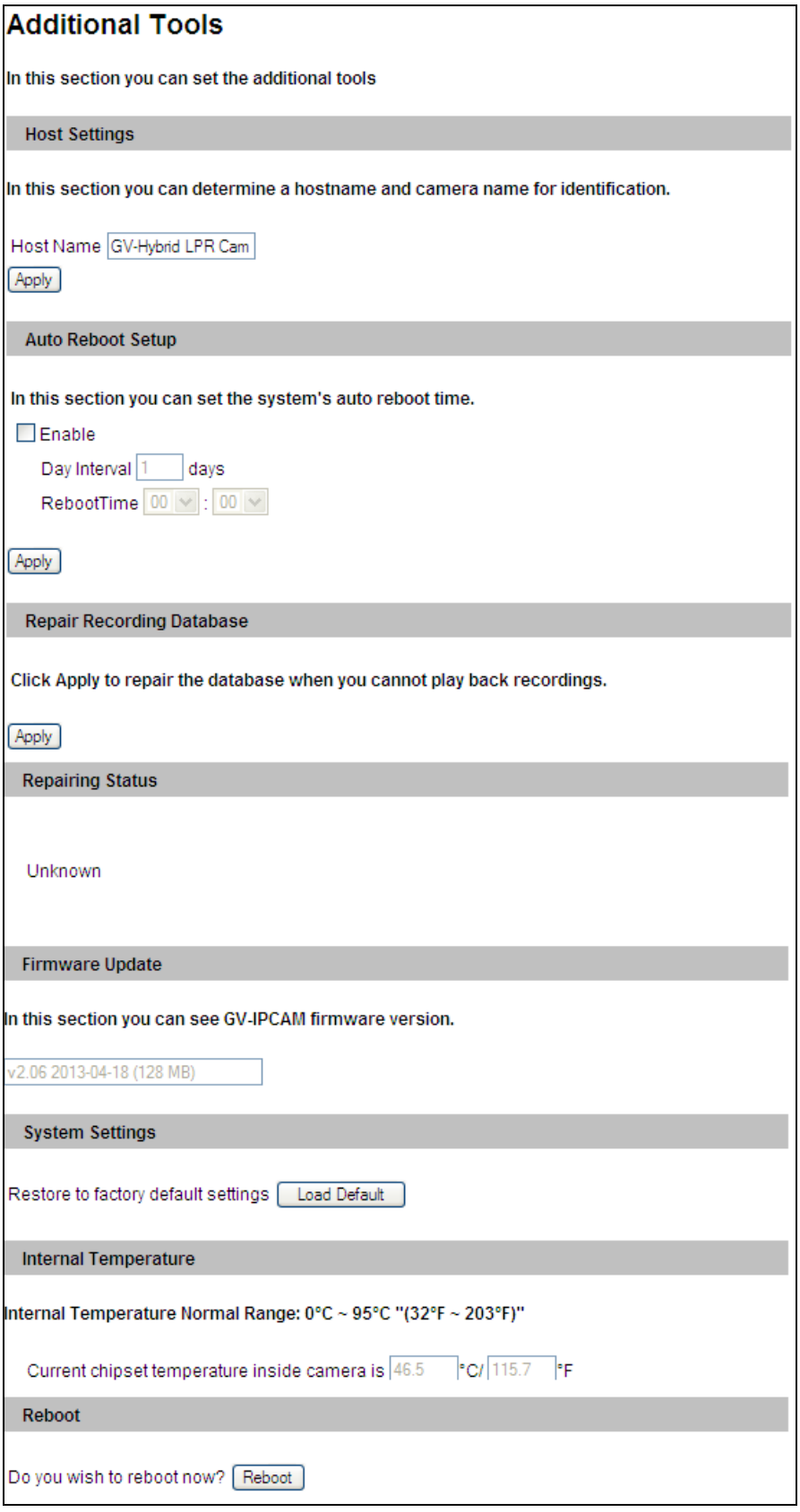

Additional Tools
In this section you can set the additional tools
Host Settings
In this section you can determine a hostname and camera name for identification.
Host Name GV-Hybrid LPR Cam
Apply
Auto Reboot Setup
In this section you can set the system's auto reboot time.
Enable
Day Interval 1 days
RebootTime 00 : 00
Apply
Repair Recording Database
Click Apply to repair the database when you cannot play back recordings.
Apply
Repairing Status
Unknown
Firmware Update
In this section you can see GV-IPCAM firmware version.
v2.06 2013-04-18 (128 MB)
System Settings
Restore to factory default settings
Load Default
Internal Temperature
Internal Temperature Normal Range: 0°C ~ 95°C "(32°F ~ 203°F)"
Current chipset temperature inside camera is 46.5 °C/ 115.7 °F
Reboot
Do you wish to reboot now?
Reboot

Figure 4-33

[Host Settings] Enter a descriptive name for the camera.

[Auto Reboot Setup] Select **Enable** to activate automatic reboot and specify the time for reboot in the sub fields below.

- **Day Interval:** Type the day interval between the reboots.
- **Reboot Time:** Use the drop-down list to specify the time for automatic reboot.

[Firmware Update] This field displays the firmware version of the camera.

[System Settings] Click the **Load Default** button to restore the factory default settings.

Note: After applying the default function, the default network connection will be DHCP or fixed IP (**192.168.0.10**) if the router does not support DHCP. Re-configure your network settings if necessary.

[Internal Temperature] This field displays the current chipset temperature inside the camera.

[Reboot] Click the **Reboot** button to reset the software configuration of the camera.

4.5.5 Language

You can select the language for the Web interface.

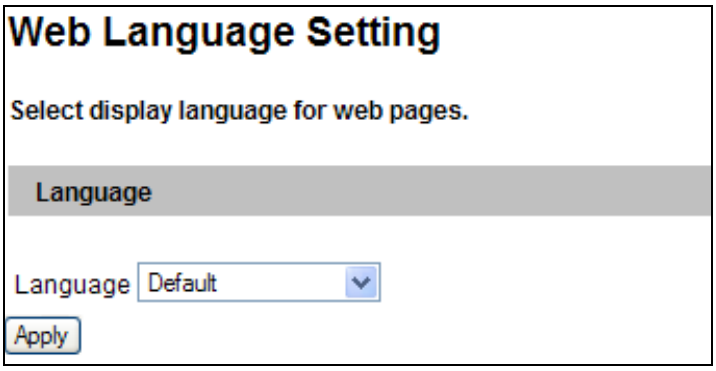


Figure 4-34

Use the Language drop-down list to select a language for the Web interface. By default, the language on the Web interface will be the same with the one used for the operating system.

Chapter 5 Advanced Applications

This chapter introduces more advanced applications.

5.1 Upgrading System Firmware

GeoVision periodically updates the latest firmware to the company website. You can update your camera firmware through the Web interface or GV-IP Device Utility included in the Software DVD.

Important Notes before You Start

Before you start updating the firmware, please read these important notes:

1. While the firmware is being updated, the power supply must not be interrupted.

WARNING: The interruption of power supply during updating causes not only update failures but also damages to your camera. In this case, please contact your sales representative and send your device back to GeoVision for repair.

---

2. Do not turn the power off within 10 minutes after the firmware has been updated.
3. If you use GV-IP Device Utility for firmware upgrade, the computer used to upgrade firmware must be under the same network as the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.
4. Stop monitoring the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.
5. Stop all the remote connections including Center V2, VSM, ViewLog Server and 3GPP/RTSP.
6. Stop the connection to GV-System.
7. If firmware upgrade fails, you will need to restore the camera to its default settings. For details, see *5.3 Restoring to Factory Default Settings*.

5.1.1 Using the Web Interface

1. In the Live View window, click the **Show System Menu** button (No. 8, Figure 3-2) and select **Remote Config**. This dialog box appears.

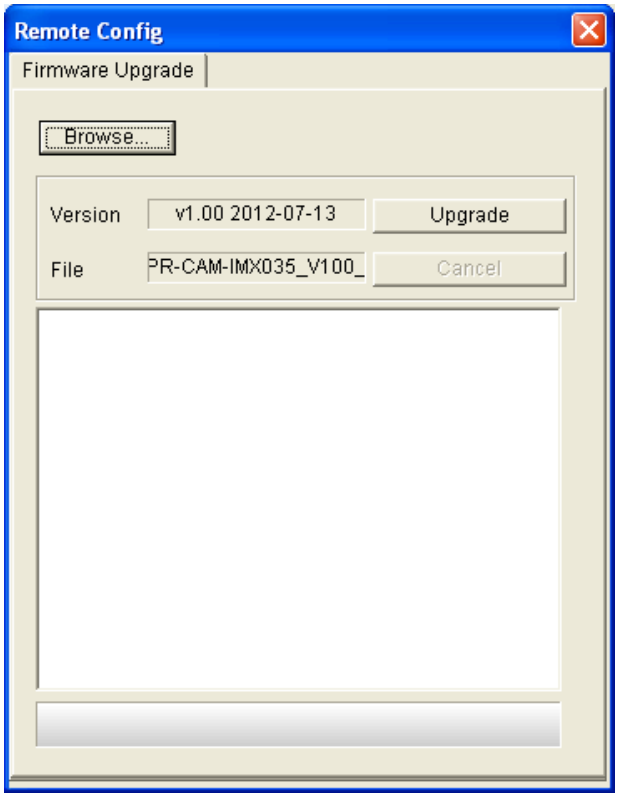


Figure 5-1

2. Click the **Browser** button to locate the firmware file (.img) saved at your local computer.
3. Click the **Upgrade** button to start upgrading.

5.1.2 Using the GV-IP Device Utility

The GV-IP Device Utility provides a direct way to upgrade the firmware to multiple GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100. Note the computer used to upgrade firmware must be under the same network with the cameras.

1. Insert the Software DVD, select **GV IP Device Utility**, and follow the onscreen instructions to install the program.
2. Double-click the **GV IP Device Utility** icon created on your desktop. This dialog box appears.

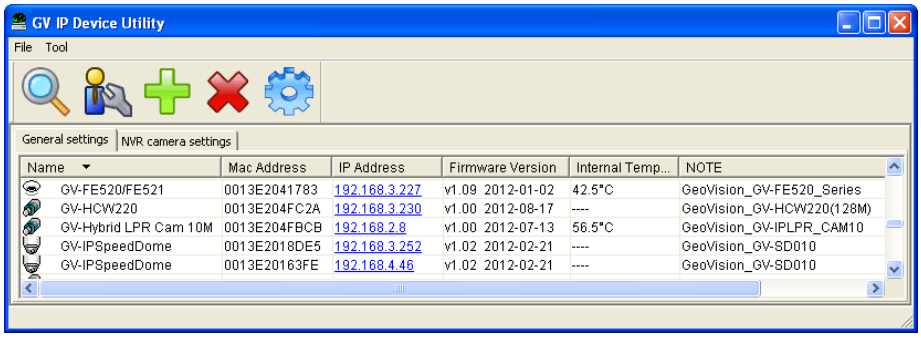


Figure 5-2

3. Click the **Search** button to locate the IP devices on the LAN or click the **New** button and assign the IP address to locate a GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 on the network. Or highlight one IP device in the list and click the **Delete** button to remove it.

4. Click on the IP address of the camera and select **Configure**. This dialog box appears.

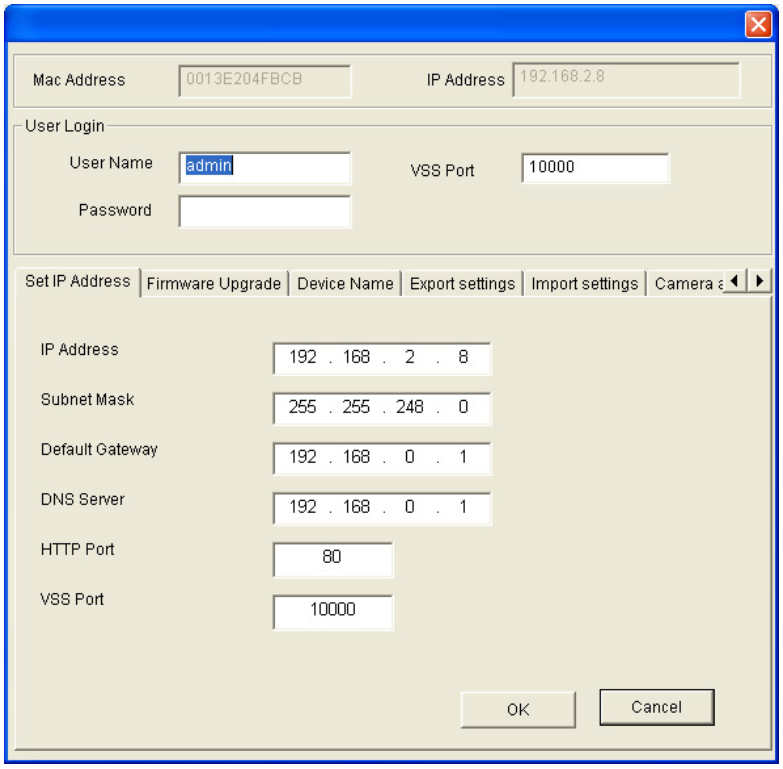


Figure 5-3

5. Click the **Firmware Upgrade** tab. This dialog box appears.

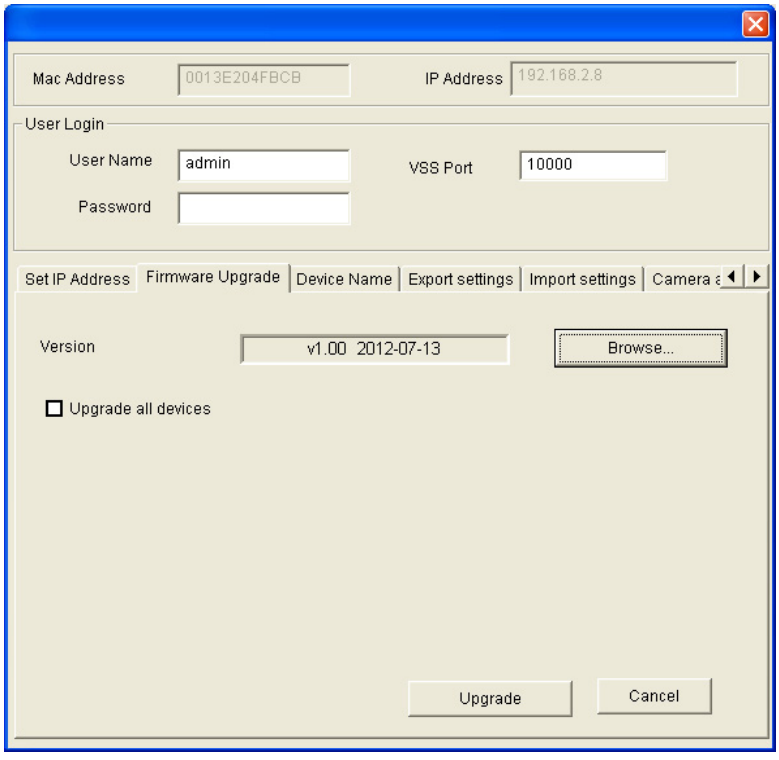


Figure 5-4

5. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.

6. If you like to upgrade all the GV-Hybrid LPR Cameras 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 in the list, check **Upgrade all devices**.
7. Type **Password**, and click **Upgrade** to start the upgrade.

5.2 Backing Up and Restoring Settings

With the GV-IP Device Utility included on the Software DVD, you can back up the configurations in the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, and restore the backup data to the current unit or import it to another unit.

To back up the settings

1. Run **GV IP Device Utility** and locate the desired camera. See Steps 1-3 in *5.1.2 Using the GV-IP Device Utility.*
2. Double-click the camera in the list. Figure 5-3 appears.
3. Click the **Export Settings** tab. This dialog box appears.

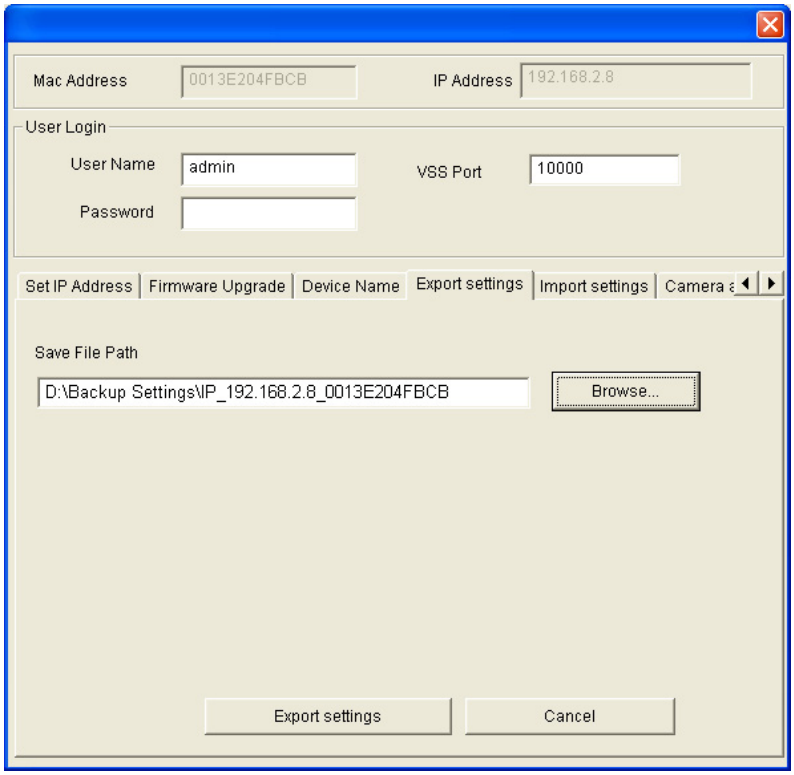


Figure 5-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click **Export Settings** to save the backup file.

To restore the settings

1. In Figure 5-3, click the **Import Settings** tab. This dialog box appears.

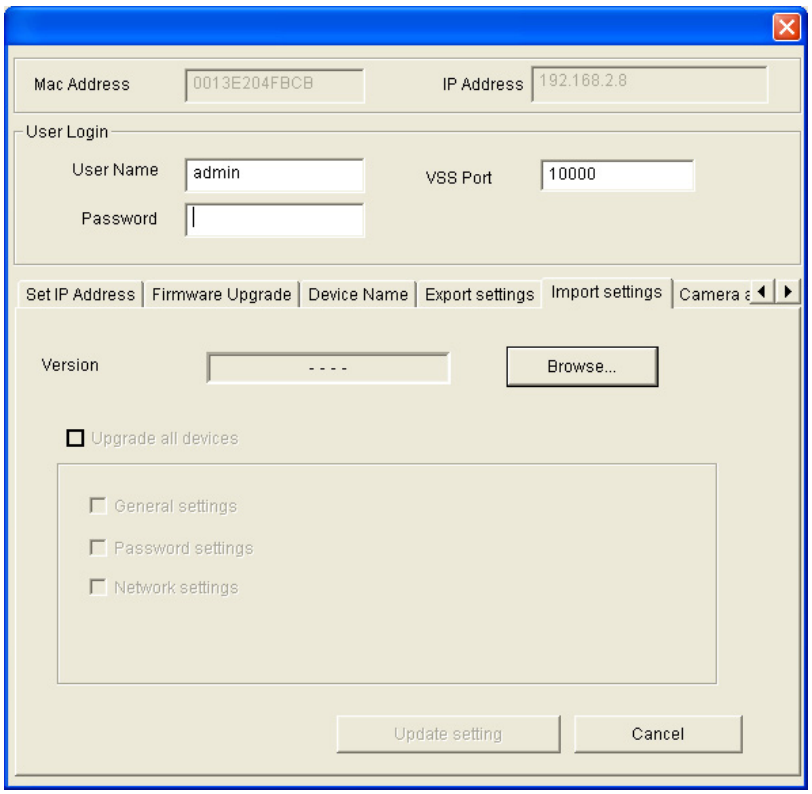


Figure 5-6

2. Click the **Browse** button to locate the backup file (.dat).
3. Select **Upgrade all devices** to import the settings into the same type of device in the same LAN. To import password settings and/or network settings, select **Password Settings** and/or **Network settings**.
4. Click the **Upgrade setting** button to start restoring.

5.3 Restoring to Factory Default Settings

To restore the factory default settings, you can use the camera's Web interface or operate directly on the camera.

5.3.1 Using the Web Interface

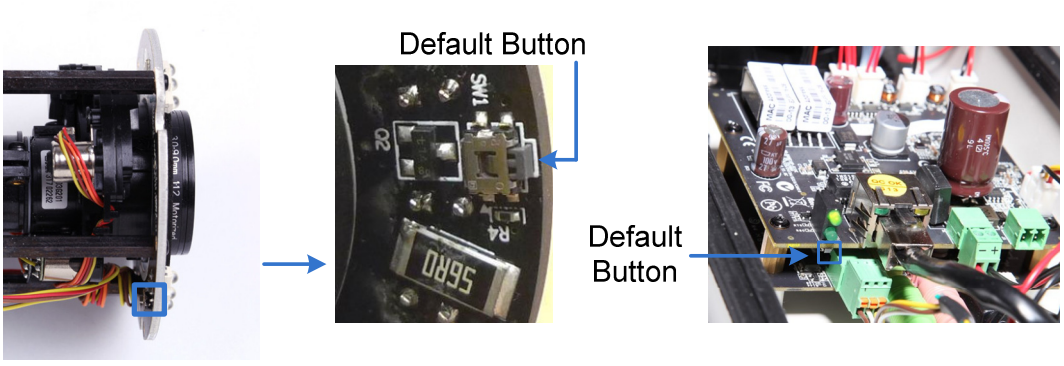
For GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, follow the steps below to restore the factory default settings through the camera's Web interface.

1. In the left menu of the Web interface, Click **Tools**.
2. In **System Settings** field, click the **Load Default** button to restore the factory default settings.

5.3.2 Directly on the Camera

For GV-IP LPR Camera 5R and GV-LPC1100, you can alternatively press the default button inside the camera.

1. Keep the power and network cables connected to the camera.
2. Loosen the camera's cover and remove the Silica Gel Bag.
3. Press and hold the default button for 8 seconds.



GV-IP LPR Camera 5R **GV-LPC1100**

Figure 5-7

4. Release the default button. When the process of loading default settings is completed, the camera reboots automatically.
5. Insert a new Silica Gel Bag and fasten the camera's cover immediately.

5.4 Verifying Watermark

The watermark is an encrypted and digital signature embedded in the video stream during the compression stage, protecting the video from the moment of creation. Watermarking ensures that an image is not edited or damaged after it is recorded. To enable the watermark function, see *Watermark Setting*, *4.1.1 Video Settings*.

The Watermark Proof is a watermark-checking program. It can verify the authenticity of the recording before you present it in court.

5.4.1 Accessing AVI Files

To verify watermark, access the recorded AVI files by one of the following methods:

1. Use the **File Save** function (No. 6, Figure 3-2) to start recording on the local computer.
2. Locate recorded files on the GV-System.

5.4.2 Running Watermark Proof

1. Install **Watermark Proof** from the Software DVD. After installation, a **WMProof** icon is created on your desktop.
2. Double-click the created icon. The Water Mark Proof window appears.
3. Click **File** from the menu bar, select **Open** and locate the recording (.avi). The selected recording is then listed on the window. Alternatively, you can drag the recording directly from the storage folder to the window.
4. If the recording is unmodified, a check mark will appear in the **Pass** column. On the contrary, if the recording is modified or does not contain watermark during recording, a check mark would appear in the **Failed** column. To review the recording, double-click the listed file on the window.

5.4.3 The Watermark Proof Window

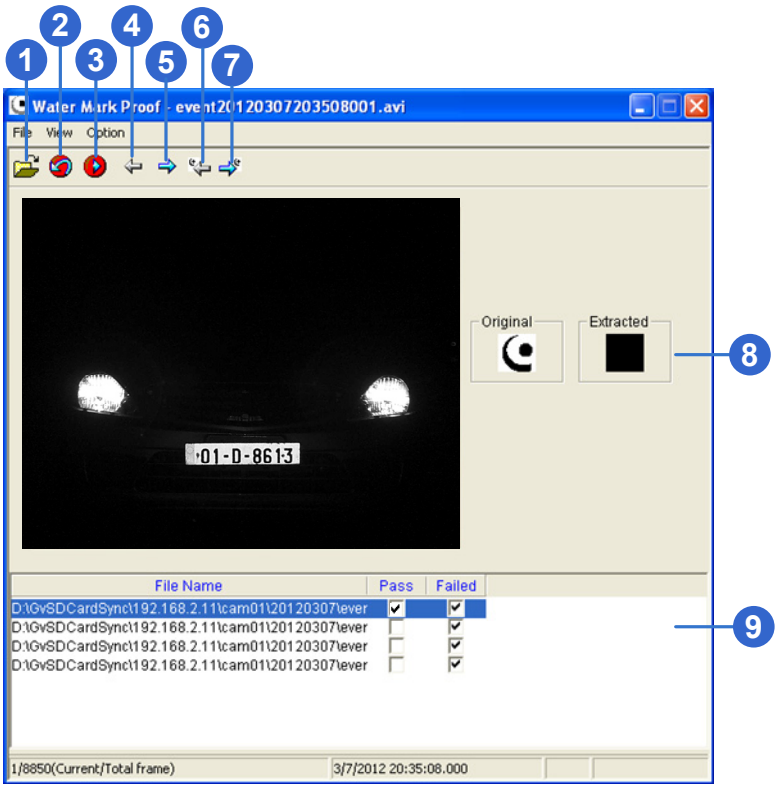


Figure 5-8

The controls in the window:

No.	Name	Description
1	Open File	Opens the recording.
2	First Frame	Goes to the first frame of the file.
3	Play	Plays the file.
4	Previous Frame	Goes to the previous frame of the file.
5	Next Frame	Goes to the next frame of the file.
6	Previous Watermarked Frame	Goes to the previous frame that contains watermark.
7	Next Watermarked Frame	Goes to the next frame that contains watermark.
8	Original vs. Extracted	The Extracted icon should be identical with the Original icon. If not, it indicates the recording has been tampered.
9	File List	Displays the proof results.

Chapter 6 DVR Configurations

The GV-System provides hybrid solution, integrating the digital videos from GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 with other analog videos. For digital videos, the GV-System provides the complete video management, such as video viewing, playback, alert settings and almost every feature of the system. The following is the integration specifications:

- GV-System **version 8.5.7.0 or later** or GV-VMS **version 14.10** is required for connection with the GV-Hybrid LPR Camera 20R / 10R.
- GV-System **version 8.5.8.0 or later** or GV-VMS **version 14.10** is required for connection with the GV-IP LPR Camera 5R.
- GV-System **version 8.5.9.0** with **patch** or GV-VMS **version 14.10** is required for connection with the GV-LPC1100.
- The GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 allows for up to **8** streams of connection.
- When a GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 is connected to IE browser or any other applications, it takes up **1** stream; when it is connected to GV-System, it takes up **2** streams.

Note:

1. The above maximum number of streams is based on the camera's maximum resolution 1280 x 1024 and the codec H.264.
2. By default, GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 is in dual streams and will take up 2 streams when connected to GV-System.

- The hardware compression and the “Pre-Recording Using RAM” feature cannot work on the videos from GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100. For details about the “Pre-Recording Using RAM” feature, see “System Configuration”, Chapter 1, *DVR User’s Manual* on the GV-NVR Software DVD.

6.1 Setting Up IP Cameras on GV-System

Follow the steps below to manually connect your GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 to GV-System.

Note: The following instructions are based on V8.5.7.0 software and user interfaces.

1. On the GV-System's main screen, click the **Configure** button, select **System Configure**, select **Camera Install** and click **IP Camera Install**. This dialog box appears.

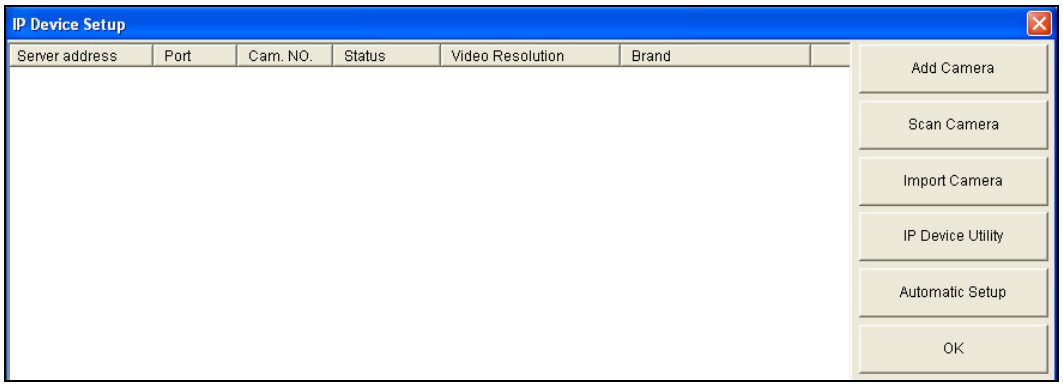


Figure 6-1

- To automatically set up an IP camera, click **Scan Camera** to detect any IP cameras on the same LAN.
- To manually set up an IP camera, click **Add Camera**.
- To import IP cameras from the GV-IP Device Utility, click **Import Camera**.
- To map IP devices through the GV-IP Device Utility program, click **IP Device Utility**.
- To add all IP cameras within the IP address range, click **Automatic Setup**.

2. Click **Add Camera**. This dialog box appears.

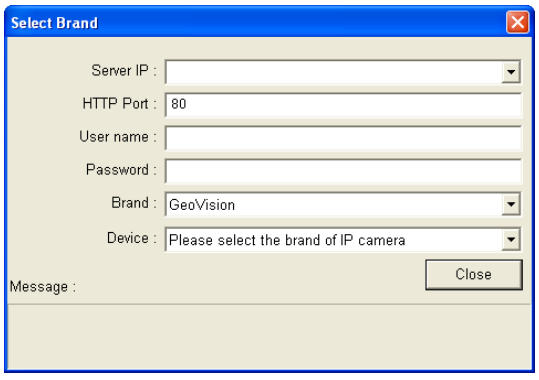


Figure 6-2

3. Type the IP address, username and password of the camera. Modify the default HTTP port if necessary.

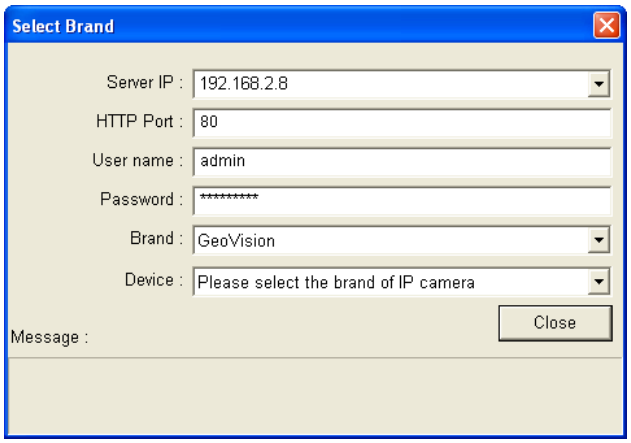


Figure 6-3

4. Select **GeoVision** from the Brand drop-down list and select **GV-IPLPR_CAM10 / GV-IPLPR_CAM 5** from the Device drop-down list. This dialog box appears.

Note: For the GV-Hybrid LPR Camera 20R, select **GV-IPLPR_CAM10.**

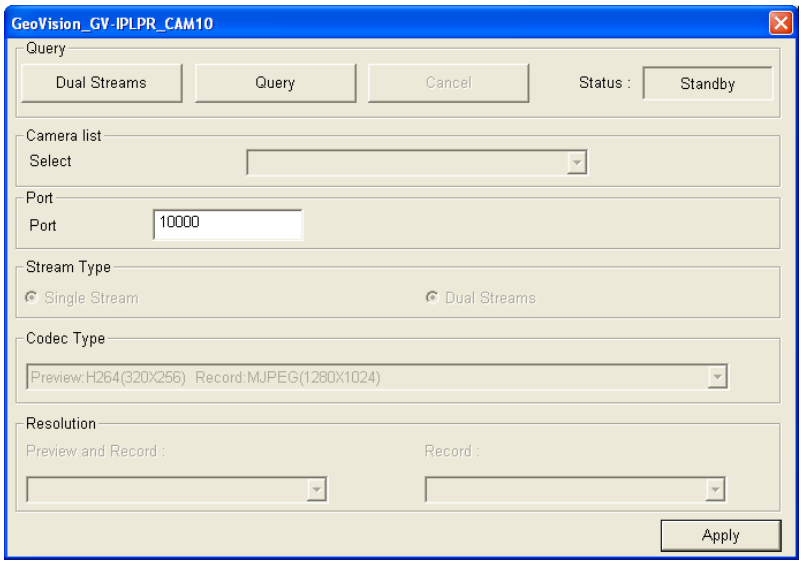


Figure 6-4

- **Dual Streams:** Click this button to set the codec type to MJPEG in the main stream and to H.264 in the sub stream with the resolutions listed below.
- **Port:** Modify the video streaming port number if necessary.
- **Stream Number:** Click the **Query** button and select **Single Stream** or **Dual Streams**.

- **Codec type:** The live view codec and resolution settings are displayed here.
- **Resolution:** Select resolutions for preview and recording.

5. Click **Apply**. The camera is added to the list.
6. Click the listed camera, select **Display position** and select a channel number to map the camera to a channel on the GV-System.

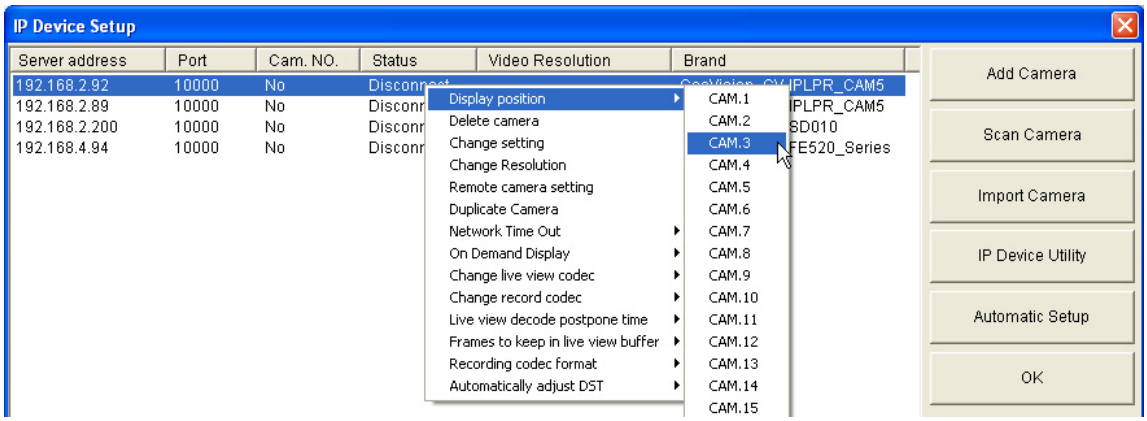


Figure 6-5

7. The Status column now should display “Connected”. Click **OK**. The dome view is displayed on the selected channel of GV-System.

6.1.1 Customizing Camera Settings

After the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 is connected and assigned with a display channel, you can configure the camera's settings such as frame rate, codec type and resolution. Right-click the camera to see the following list of options:

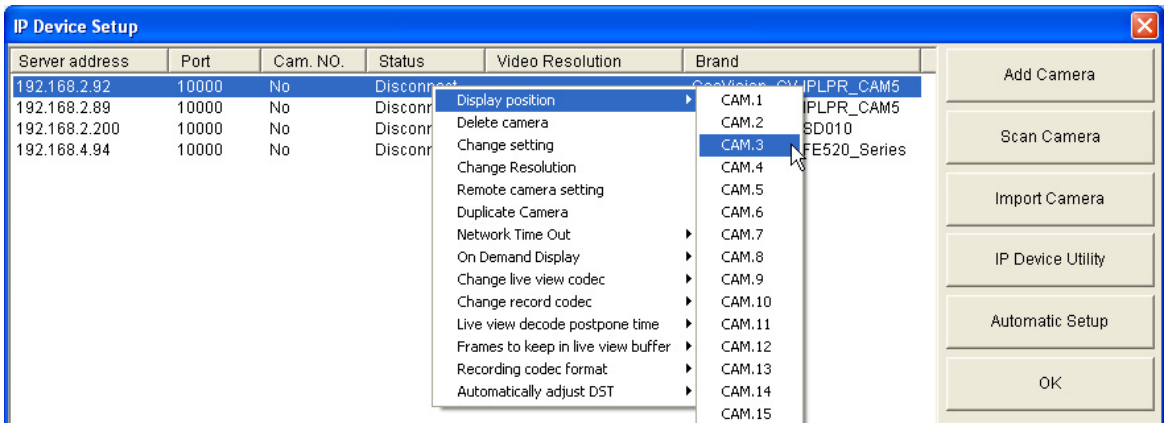


Figure 6-6

- **Change Setting:** Changes the IP address, port number, username and password of the camera. This function is only available when the camera is disconnected.
- **Change Resolution:** Changes the display ratio, live view resolution and record resolution.
- **Remote camera setting:** Accesses the configuration interface of the connected camera.
- **Network Time Out:** When network disconnection exceeds the specified time period, the camera status will be displayed as Connection Lost.
- **On Demand Display:** Enables automatic adjustment of live view resolution and produces good image quality without causing high CPU usage.
- **Change live view codec:** Changes the live view codec.
- **Change record codec:** Changes the recording codec.
- **Live view decode postpone time:** Specifies the number of milliseconds to postpone live view decoding. When network connection with the camera is unstable or when the time length between frames is not evenly distributed, postponing the live view decoding will make the video smoother**.**
- **Frames to keep in live view buffer:** Specifies the number of frames to keep in the live view buffer.
- **Recording Codec Format:** Specifies whether to record in standard or GeoVision type of JPEG, H.264 codec.

- **Automatically Adjust DST:** If enabled, the time on the camera's Web interface will be synchronized with the time of the GV-System when DST period starts or ends on the GV-System.

6.2 Setting Up IP Cameras on GV-VMS

Follow the steps below to manually connect your GV-IR LPR Camera 5R / GV-LPC1100 to GV-VSM.

Note: The following instructions are based on V14.10 software and user interfaces.

---

1. To access the IP Device Setup page, click **Home** , select **Toolbar** , click **Configure** and select **Camera Install**.

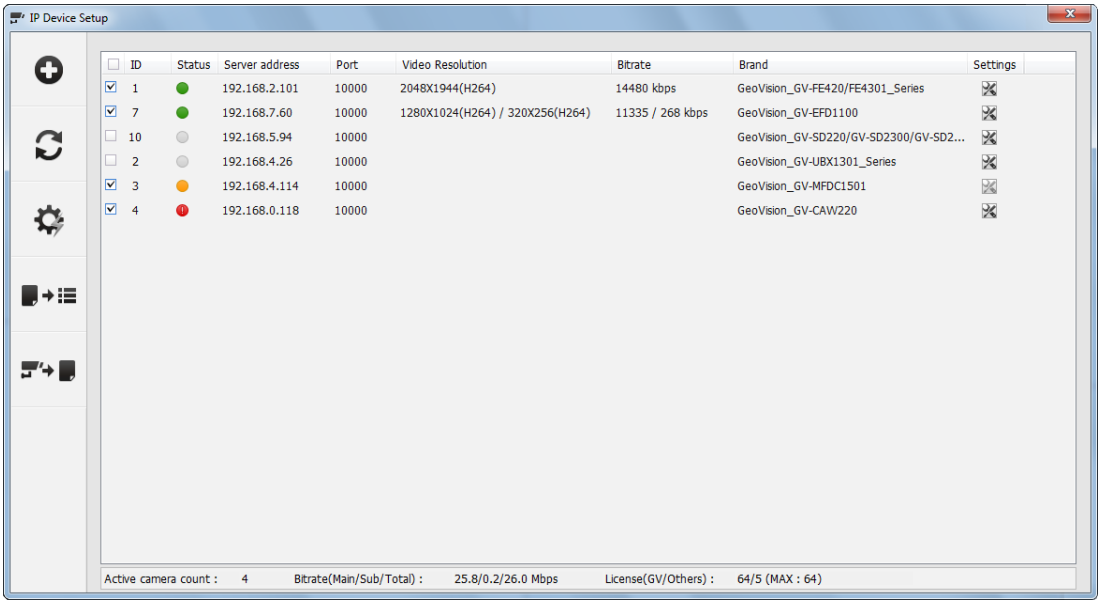


Figure 6-7

2. Click **Add Camera** . This dialog box appears.

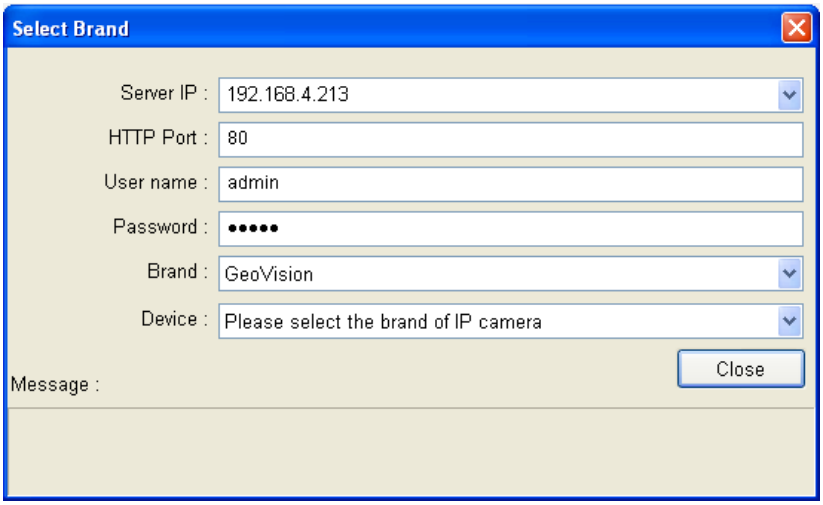


Figure 6-8

3. Type the IP address, username and password of the IP camera. Modify the default HTTP port **80** if necessary.
4. Select a camera brand and model name from the **Brand** and **Device** drop-down lists respectively. This dialog box appears.

Note:

1. For the GV-IP LPR Camera 5R, select **GV-IPLPRCam5R.**
2. For the GV-LPC1100, select **GV-LPC1100.**

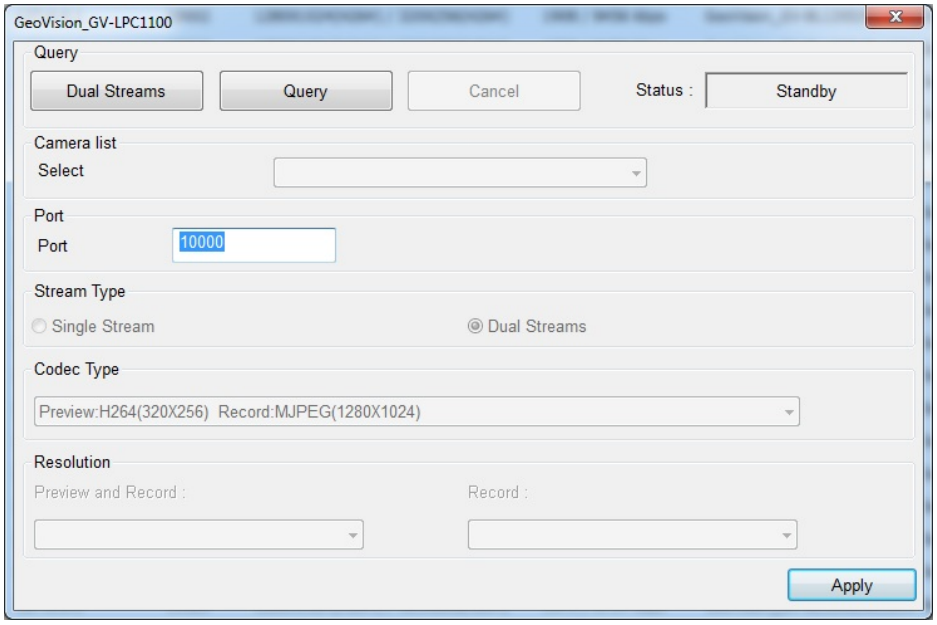


Figure 6-9

5. In the dialog box, configure the options which may vary depending on camera brands.
   - **Dual Streams:** The GV-IR LPR Camera 5R / GV-LPC1100 is set to dual streams by default. Select this option to apply the dual-streaming settings (lower resolution for live view and higher resolution for recording) if the camera supports dual streams.
   - **Query:** Detect and apply the current codec and resolution setting on the camera. This function may not be available for some third-party cameras.
   - **Camera list**: Select a camera number.
   - **Port:** Modify the video streaming port number if necessary.
   - **Stream Type:** You may have the option of **Single Stream** or **Dual Streams** depending on camera models.
   - **Codec Type:** You may have different codec options depending on camera models. If the selected camera supports dual streaming, the live view codec and recording codec can be set differently.
   - **Resolution:** You may select the different resolutions for live view and recording.
6. Click **Apply** to add the IP camera to the IP Device List.
7. To connect the added camera, click the box besides the **ID** column. Upon successful connection, the **Status** icon shows green, with the video resolution and bit rate being displayed in the correspondent columns.

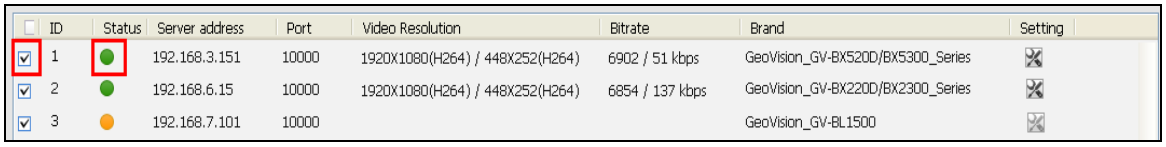


Figure 6-10

6.3 Remote Monitoring with Multi View

You can monitor the live view of the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 using the Multi View.

Connecting to GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100

The Multi View program is available in the GV-System applications, and is also included in the Software DVD as an independent program. The following is an example of running the Multi View through WebCam Server on the GV-System.

1. To enable the remote access to the GV-System, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the Web browser and type the IP address of the GV-System. The Single View page appears.
3. Select **Multi View** and the desired viewing resolution. The valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the Multi View program before you can run it.
4. On the Multi View window, click the **Edit Host** button. The Edit Host window appears.
5. To create a host, click the **New** button. You need to create a group before creating a host.

6. Select **GV-IP Camera, GV-IP Speed Dome** from the Device drop-down list. Type the host name, IP address, user name and password of the camera. Modify the default VSS port **10000** if necessary.

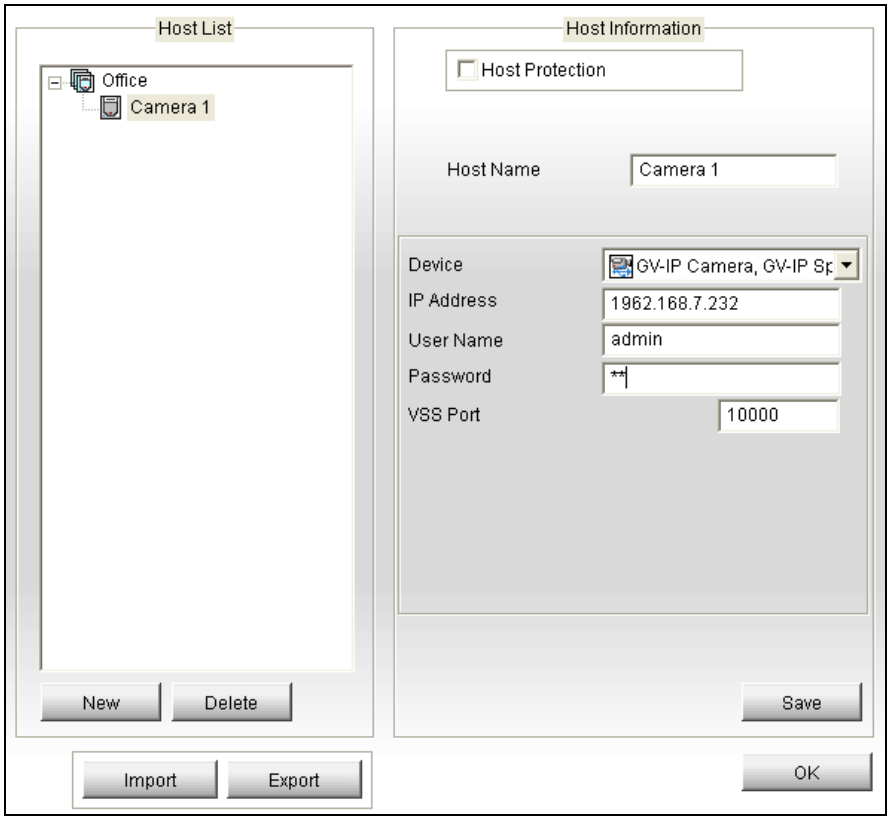


Figure 6-11

7. Click **Save** to establish connection.

For details on the Multi View functions, see “Multi View Viewer”, Chapter 8, *DVR User’s Manual* on the GV-NVR Software DVD.

6.4 Remote Monitoring with E-Map

You can use the Remote E-Map to monitor the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

Creating an E-Map for the Camera

With the E-Map Editor, you can create an E-Map for the camera. The E-Map Editor is available in the two applications: Main System and E-Map Server. The following is an example of running the E-Map Editor from the Main System.

1. Go to Windows **Start** menu, point to **Programs**, select **GV folder** and click **E-Map Editor**.
2. To create an E-Map, click the **Add Map** button on the toolbar. A New Map file appears.
3. Double-click the New Map file, and click the **Load Map** button on the toolbar to import a graphic file.
4. To create a host, click the **Add Host** button on the toolbar and select **Add Video Server**.
5. Right-click the created New Host in the Host View, and select **Host Settings**. This dialog box appears.

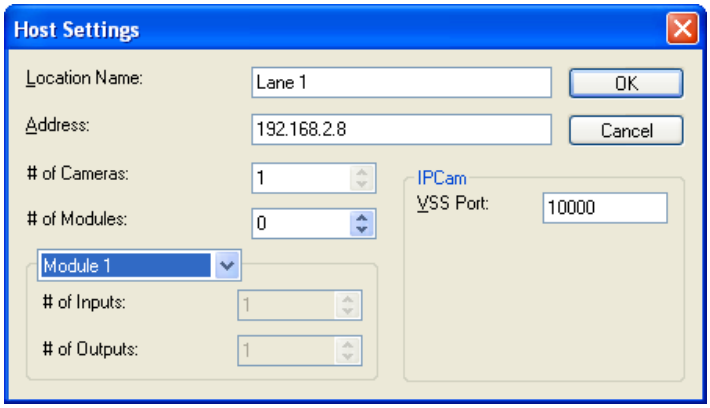


Figure 6-12

6. Give the camera a location name, and type its IP address (or domain name). Keep the default VSS port **10000**, or modify it to match that of the camera.
7. Click **OK** to save the settings.
8. Expand the created host folder. Drag and drop the camera icon onto the imported E-Map.
9. Close the E-Map Editor. Click **Yes** when you are prompted to save the file.

For details on creating an E-Map file on the E-Map Server, see “E-Map Server”, Chapter 9, *DVR User’s Manual* on the GV-NVR Software DVD.

Connecting to the Camera

Depending on where you save the created E-Map file (GV-System, E-Map Server or Control Center), the steps to open the Remote E-Map window for monitoring may vary slightly. The following is the connection example when you store the E-Map file in the GV-System.

1. To enable the remote access to the GV-System, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the Web browser and type the address of the GV-System. The Single View page appears.
3. Select **Remote eMap**. The valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the E-Map program before you can run it.
4. On the Remote E-Map window, click the **Login** button and select the camera host to access its videos. The valid user name and password are required to log in the camera.

For details on the Remote E-Map functions, see “The Remote E-Map Window”, Chapter 9, *DVR User’s Manual* on the GV-NVR Software DVD.

Chapter 7 CMS Configurations

This section introduces the related settings to enable connecting to the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100 in the central monitoring stations Center V2 and VSM and Dispatch Server.

7.1 Center V2

The Center V2 can monitor the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

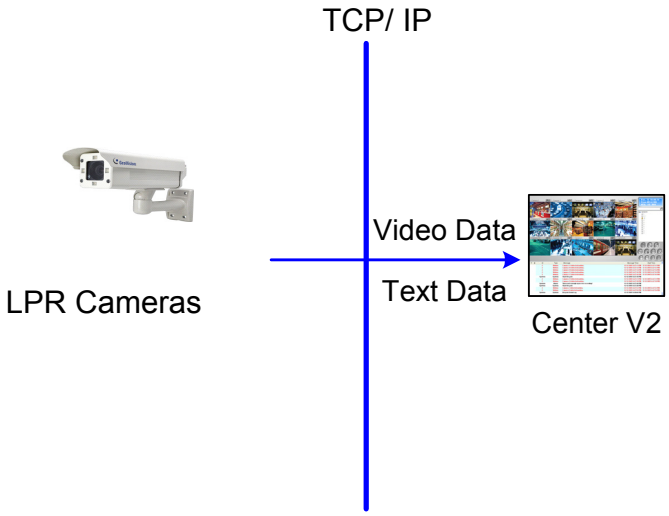


Figure 7-1

- To set the appropriate port connecting to the camera, click the **Preference Settings** button, select **System Configure**, click the **Network** tab, and check **Accept connections from GV-Compact DVR, Video Server & IP Cam**. Keep the default port **5551** for the Port 2 option, or modify it to match the Center V2 port on the camera.

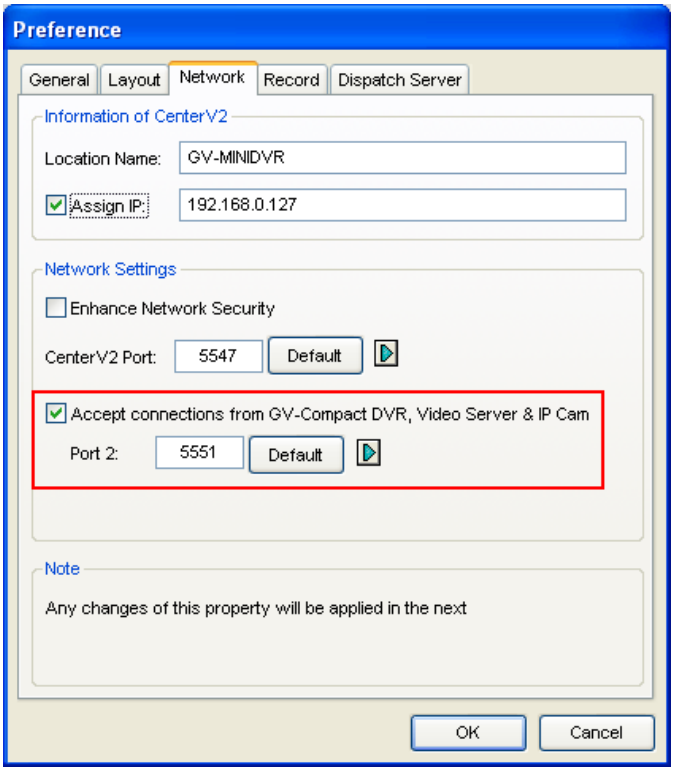


Figure 7-2

➢ To define how to display the received video on motion detection, click the **Preference Settings** button and select **System Configure**. This dialog box appears.

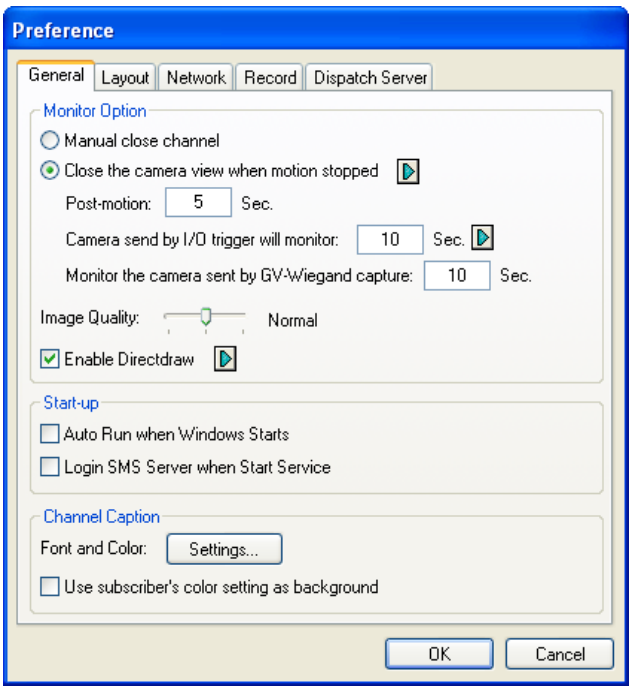


Figure 7-3

- **Manual close channel:** Closes the triggered camera view manually.
- **Close the camera view when motion stopped:** Closes the triggered camera view automatically when motion stops.

- **Post Motion:** Specify the duration of the camera view remaining on the monitoring window after motion stops.
- **Camera send by I/O trigger will monitor:** This feature is not functional for GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

For further information on how to mange the received video from the camera, see *GV-CMS Series User's manual.*

7.2 Vital Sign Monitor

The Vital Sign Monitor can monitor the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100.

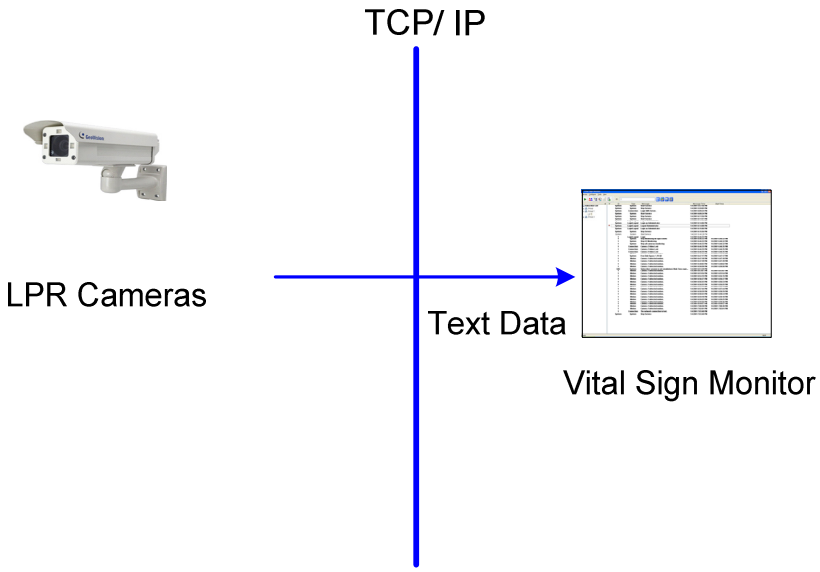


Figure 7-4

- To set the appropriate port connecting to the camera, click **Configure** on the window menu, and select **System Configure** to display this dialog box. In the Connective Port field, keep the default value **5609** for the Port 2 option, or modify it to match the VSM port on the camera.

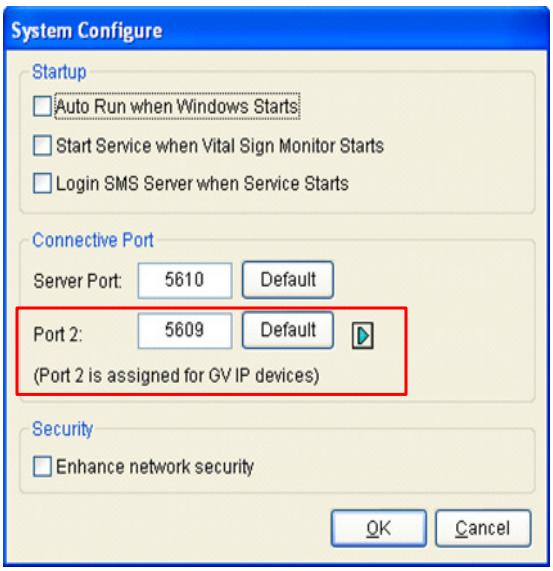


Figure 7-5

For further information on how to mange the received video from the camera, see *GV-CMS Series User's manual*.

7.3 Dispatch Server

The Dispatch Server can manage the GV-Hybrid LPR Camera 20R / 10R / GV-IP LPR Camera 5R / GV-LPC1100, and distribute them to the Center V2.

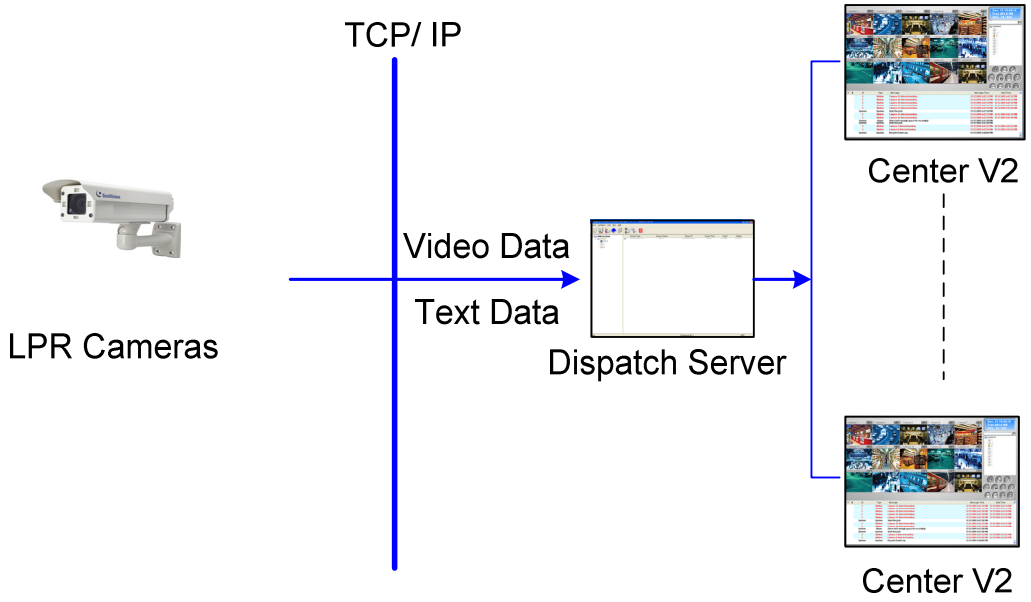


Figure 7-6

➢ To enable connecting to the camera, click the **Server Setting** button on the toolbar, and enable **Allow GV IP devices to login as subscriber from Port**. Keep the default port **5551**, or modify it to match the Center V2 port on the camera.

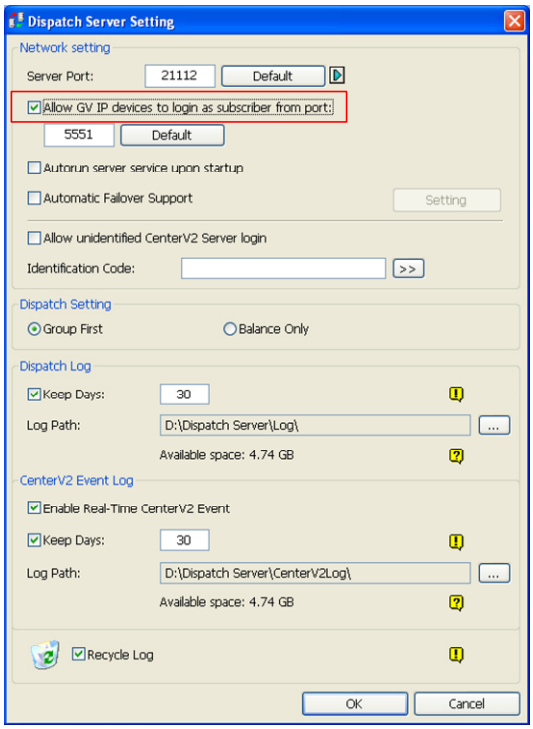


Figure 7-7

For further information on how to mange the received video from the camera, see *GV-CMS Series User's manual*

Chapter 8 Smart Device Connection

You can access the live view on your mobile devices using the mobile application GV-Eye. Android Smartphone, tablet, iPad, iPhone and iPod Touch are supported.

For details on system requirements, installation and setup, see visit our website: http://www.geovision.com.tw/english/5_4_iview.asp

Specifications

GV-Hybrid LPR Camera 20R / 10R

Camera		
Image Sensor		1/3" B/W progressive scan CMOS
Picture Elements		1280 (H) x 1024 (V)
Shutter Speed		Automatic, Manual (1/500 ~ 1/8000 sec)
White Balance		Auto / Manual (2800K ~ 8500K)
S/N Ratio		50 dB
Max. Speed		120 km/h (75 mph)
Lens		
Megapixel		1.3 MP
Lens Type		Varifocal
Focal Length		5 ~ 50 mm
Maximum Aperture		F/1.6
Mount		CS
Image Format		1/3"
Operation	**Focus**	Manual (w/lock)
	Zoom	Manual (w/lock)
	Iris	DC drive
IR LED Quantity (for 10R only)		4 high power IR LEDs
IR Distance (for 10R only)		6 ~ 12 m (19.7 ~ 39.4 ft)
Max. Torque (Focus / Zoom Screws)		0.049 N.m
Operation		
Video Compression		H.264, MJPEG
Video Stream		Dual streams from H.264 and MJPEG
Frame Rate		30 fps at 1280 x 1024 *The frame rate and the performance may vary depending on the number of connections and data bitrates (different scenes)
Image Setting		Brightness, Contrast, Sharpness, Gamma, Image Orientation, Shutter Speed, Defog

Operation		
Audio Compression		G.711, AAC (Optional)
Audio Support		Two-way audio
Video Resolution		
Main Stream	**4:3**	1280 x 960, 640 x 480, 320 x 240
	16.9	1280 x 720, 640 x 360, 448 x 252
	5:4	1280 x 1024, 640 x 512, 320 x 256
Sub Stream	**4:3**	640 x 480, 320 x 240
	16.9	640 x 360, 448 x 252
	5:4	640 x 512, 320 x 256
TV-Out		NTSC, PAL
Network		
Interface		10/100 Base-T Ethernet, RJ-45 connector
Protocol		DHCP, DynDNS, FTP, HTTP, HTTPS, NTP, ONVIF (Profile S), PSIA, QoS (DSCP), RTSP, SMTP, SNMP, TCP, UDP, UPnP, 3GPP/ISMA
Mechanical		
Lens Mounting		CS-Mount
Temperature Detector		Yes
Camera Angle Adjustment	**Pan**	0° ~ 330°
	Tilt	0° ~ 90°
Connectors	**Power**	PoE+ (IEEE 802.3at)
	Ethernet	RJ-45
	Audio	1 In (externally connecting a microphone) 1 Out (Stereo phone jack, 3.5 mm / 0.14”)
	Digital I/O	N/A
	TV-Out	BNC connector (640 x 480 resolution) *The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480.
LED Indicator		1 LED (Status)

General			
Operating Temperature			-40°C ~ 50°C (-40°F ~ 122°F)
Humidity			10% ~ 90% (non-condensing)
Power Source			PoE (IEEE802.3at)
Max. Power Consumption			48 W
Dimensions	**Camera Body**	**10R**	317.5 x 108.5 x 230.57 mm (12.5 x 4.27 x 9.08”) (with mounting base)
		20R	317.5 x 284.2 x 290 mm (12.5 x 11.19 x 11.41”) (including IR Illuminator / with mounting base)
	Cable Length		1 m (3.28 ft)
Weight		**10R**	3.2 kg (7.05 lb)
		20R	5.4 kg (11.9 lb) (including IR Illuminator)
Ingress Protection			IP67
Vandal Resistance			IK10 for metal casing
Heater On			-40°C ~ 8°C (-40°F ~ 46.4°F)
Fan			Constantly On
Regulatory			CE, FCC, C-Tick, RoHS compliant
Power over Ethernet			
PoE Standard			IEEE 802.3at Power over Ethernet / PD
PoE Power Supply Type			End-Span
PoE Power Output			DC 48 V, 600mA (34.2 W Max.)
Web Interface			
Installation & Management			Web-based configuration
Firmware Upgrade			Remote upgrade through Web Browser GV-IP Device Utility included in the Software DVD
Access from Web Browser			Live View, Video Recording, Video Quality, Bandwidth Control, Image Snapshot, Audio, Picture in Picture, Picture and Picture, Privacy Mask, Tampering Alarm, Text Overlay
Language			Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish

Applications		
Network Storage		GV-NVR, GV-System, GV-Recording Server
Smart Device Access		- GV-Eye for Android and iOS - embedded 3GPP/ISMA browser
Live Viewing		IE, GV-MultiView
CMS Server support		GV-Control Center, GV-Center V2, GV-Vital Sign Monitor
IR Illuminator (for GV-Hybrid LPR Camera 20R)		
IR LED Quantity		12 high power IR LEDs
IR Distance		18 ~ 22 m (59.1 ~ 72.2 ft)
Power Source		DC 90V ~ 260V
Max. Power Consumption		28 W
Operating Temperature		-40°C ~ 60°C (-40°F ~ 140°F)
Dimensions (L x W x H)		170 x 160 x 158 mm (6.69 x 6.3 x 6.22”)
Weight		2.2 g (4.85 lb)
Conduit	**Cable Entry**	G(PF) 1/2" thread
	Thread Diameter	20.4 mm (0.8”)
GV-PA481		
PoE Standard		IEEE 802.3at Power over Ethernet / PD
PoE Power Output		DC 48V, 1A (48 W Max.)
Ethernet Cable Length		Max 10 m (32.8 ft) from GV-PA481 to IP device, CAT5
Power Input		AC 100V ~ 240V, 2A
Operating Temperature		0°C ~ 40°C (32°F ~ 104°F)
Dimensions (L x W x H)		138 x 104 x 38 mm (5.43 x 4.09 x 1.5”)
Weight		610 g (1.342 lb)
Note: All specifications are subject to change without notice.		

GV-IP LPR Camera 5R

Camera		
Image Sensor		1/3” B/W progressive scan CMOS
Picture Elements		1280 (H) x 1024 (V)
Shutter Speed		Automatic, Manual (1/500 ~ 1/8000 sec)
White Balance		Auto / Manual (2800K ~ 8500K)
S/N Ratio		50 dB
Max. Speed		60 km/h (37 mph)
Lens		
Megapixel		1.3 MP
Lens Type		Motorized varifocal lens
Focal Length		3 ~ 9 mm
Maximum Aperture		F/1.2
Mount		Ø14 mm
Image Format		1/2.7”
Operation	**Focus**	Auto Focus
	Zoom	3X Optical Zoom
	Iris	DC drive
IR LED Quantity		12
Max. IR Distance		5 m (16.4 ft.)
Operation		
Video Compression		H.264, MJPEG
Video Stream		Dual streams from H.264 and MJPEG
Frame Rate		30 fps at 1280 x 1024 *The frame rate and the performance may vary depending on the number of connections and data bitrates (different scenes)
Image Setting		Brightness, Contrast, Sharpness, Gamma, Image Orientation, Shutter Speed, Defog, Zoom, Focus Change
Audio Support		N/A

Video Resolution		
Main Stream	**4:3**	1280 x 960, 640 x 480, 320 x 240
	16.9	1280 x 720, 640 x 360, 448 x 252
	5:4	1280 x 1024, 640 x 512, 320 x 256
Sub Stream	**4:3**	640 x 480, 320 x 240
	16.9	640 x 360, 448 x 252
	5:4	640 x 512, 320 x 256
TV-Out		N/A
Network		
Interface		10/100 Base-T Ethernet, RJ-45 connector
Protocol		DHCP, DynDNS, FTP, HTTP, HTTPS, NTP, ONVIF (Profile S), PSIA, QoS (DSCP), RTSP, SMTP, SNMP, TCP, UDP, UPnP, 3GPP/ISMA
Mechanical		
Temperature Detector		Yes
Camera Angle Adjustment	**Pan**	0° ~ 360°
	Tilt	90° ~ 180°
	Rotate	0° ~ 360°
Connectors	**Power**	PoE
	Ethernet	RJ-45
	Audio	N/A
	Digital I/O	N/A
LED Indicator		No
General		
Operating Temperature		-10°C ~ 50°C (14°F ~ 122°F)
Humidity		10% ~ 90% (non-condensing)
Power Source		PoE+ (IEEE802.3at)
Max. Power Consumption		16.6 W
Dimensions	**Camera Body**	289.02 x 87.75 x 148.95 mm (11.4 x 3.45 x 5.86”)
	Cable Length	1 m (3.28 ft)
	Max. Cable Diameter	ø 7.1 mm (0.28”)
	Max. Connector Diameter	ø 25.2 mm (0.99”)
Weight		1.4 kg (3.08 lb)

General	
Ingress Protection	IP67
Vandal Resistance	IK10 for metal casing
Fan	Constantly On
Regulatory	CE, FCC, C-Tick, RoHS compliant
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet / PD
PoE Power Supply Type	End-Span
PoE Power Output	DC 48V, 345mA (16.6 W Max.)
Web Interface	
Installation & Management	Web-based configuration
Firmware Upgrade	Remote upgrade through Web Browser or GV-IP Device Utility included in the Software DVD
Access from Web Browser	Live View, Video Recording, Video Quality, Bandwidth Control, Image Snapshot, Picture in Picture, Picture and Picture, Privacy Mask, Tampering Alarm, Text Overlay
Language	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish
Applications	
Network Storage	GV-NVR, GV-System, GV-Recording Server
Smart Device Access	- GV-Eye for Android and iOS - embedded 3GPP/ISMA browser
Live Viewing	IE, GV-MultiView
CMS Server support	GV-Control Center, GV-Center V2, GV-Vital Sign Monitor
Note: All specifications are subject to change without notice.	

GV-LPC1100

Camera		
Image Sensor		1/3'' B/W progressive scan CMOS
Picture Elements		1280 (H) x 1024 (V)
Shutter Speed		Automatic, Manual (1/500 ~ 1/8000 sec)
White Balance		Auto / Manual (2800K ~ 8500K)
S/N Ratio		50 dB
Max. Speed		120 km/h (75 mph)
Lens		
Megapixel		1.3 MP
Lens Type		Motorized varifocal lens
Focal Length		9 ~ 22 mm
Maximum Aperture		F/1.2
Mount		Ø14 mm
Image Format		1/2.7"
Operation	**Focus**	Auto Focus
	Zoom	3X Optical Zoom
	Iris	P-Iris
IR LED Quantity		4 high power IR LEDs
IR Distance		8 ~ 10 m (26.2 ~ 32.8 ft)
Operation		
Video Compression		H.264, MJPEG
Video Stream		Dual streams from H.264 and MJPEG
Frame Rate		30 fps at 1280 x 1024 *The frame rate and the performance may vary depending on the number of connections and data bitrates (different scenes)
Image Setting		Brightness, Contrast, Sharpness, Gamma, Image Orientation, Shutter Speed, Defog
Audio Compression		G.711, AAC (Optional)
Audio Support		Two-way audio

Video Resolution		
Main Stream	**4:3**	1280 x 960, 640 x 480, 320 x 240
	16.9	1280 x 720, 640 x 360, 448 x 252
	5:4	1280 x 1024, 640 x 512, 320 x 256
Sub Stream	**4:3**	640 x 480, 320 x 240
	16.9	640 x 360, 448 x 252
	5:4	640 x 512, 320 x 256
TV-Out		NTSC, PAL BNC connector (640 x 480 resolution)
Network		
Interface		10/100 Base-T Ethernet, RJ-45 connector
Protocol		DHCP, DynDNS, FTP, HTTP, HTTPS, NTP, ONVIF (Profile S), PSIA, QoS (DSCP), RTSP, SMTP, SNMP, TCP, UDP, UPnP, 3GPP/ISMA
Mechanical		
Temperature Detector		Yes
Camera Angle Adjustment	**Pan**	0° ~ 360°
	Tilt	90° ~ 180°
Connectors	**Power**	DC 48V, AC 24V, High PoE (PoE++, 120 W)
	Ethernet	RJ-45
	Audio	1 In (externally connecting a microphone) 1 Out (Stereo phone jack, 3.5 mm / 0.14”)
	Digital I/O	1 In / 1 Out
	TV-Out	BNC connector (640 x 480 resolution) *The TV-Out function only works in 640 x 480 resolution. For TV-Out to work properly, you must set the video resolution to 1280 x 1024 or lower. If both streams are enabled, the Sub Stream must be set to 640 x 480.
LED Indicator		N/A

General		
Operating Temperature		-40°C ~ 50°C (-40°F ~ 122°F)
Humidity		10% ~ 90% (non-condensing)
Power Source		DC 48V 2.5A, AC 24V 3A, High PoE (PoE++, 120 W)
Max. Power Consumption		50 W
Dimensions	**Without support rack**	406 x 145 x 109 mm (16" x 5.7" x 4.3")
	Cable Length	1 m (3.28 ft)
Weight	**With rack**	3.32 Kg
	Without support rack	2.62 Kg
Ingress Protection		IP67
Vandal Resistance		IK10 for metal casing
Heater On		-40°C ~ 8°C (-40°F ~ 46.4°F)
Fan		Constantly On
Regulatory		CE, FCC, C-Tick, RoHS compliant
Power over Ethernet		
PoE Standard		High Power Over Ethernet / PD
PoE Power Supply Type		Mid-Span
PoE Power Output		DC 48V, 2.5A (120 W Max.)
Web Interface		
Installation & Management		Web-based configuration
Firmware Upgrade		Remote upgrade through Web Browser GV-IP Device Utility included in the Software DVD
Access from Web Browser		Live View, Video Recording, Video Quality, Bandwidth Control, Image Snapshot, Audio, Picture in Picture, Picture and Picture, Privacy Mask, Tampering Alarm, Text Overlay
Language		Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish

Application	
Network Storage	GV-NVR, GV-System, GV-Recording Server
Smart Device Access	- GV-Eye for Android and iOS - embedded 3GPP/ISMA browser
Live Viewing	IE, GV-MultiView
CMS Server support	GV-Control Center, GV-Center V2, GV-Vital Sign Monitor
GV-PA482	
PoE Standard	High Power Over Ethernet (PoE++) / PSE
PoE Power Output	DC 48V, 2.5A (120 W Max.)
Ethernet Cable Length	Max 100 m (32.8 ft) from GV-PA482 to IP device, CAT5e
Power Input	AC 100V ~ 240V, 2.5A
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)
Dimensions (L x W x H)	43 x 69 x 40 mm (1.69 x 2.72 x 1.57”)
Weight	130 g (0.29 lb)
Note: All specifications are subject to change without notice.	

Appendix

A. The CGI Command

With GV-Hybrid LPR Camera 20R / 10R, you can obtain a snapshot of the live view or access the User Account Web interface simply by executing CGI commands. For a GV-Hybrid LPR Camera 10R with the following details:

IP address: 192.168.2.11
Username: admin
Password: admin
Desired Stream: 1

- To obtain a snapshot of live view, type the following into your Web browser:

http://192.168.2.11/PictureCatch.cgi?username=admin&password=admin&channel=1

- To access the User Account settings on the Web interface, type the following into your Web browser:

http://192.168.2.11/ConfigPage.cgi?username=admin&password=admin&page=UserSetting

B. RTSP Protocol Support

The GV-Hybrid LPR Camera 20R / 10R supports RTSP protocol for both video and audio streaming. For RTSP command, enter:

rtsp://<IP of the GV-Hybrid LPR Camera 10R:8554/<CH No.>.sdp

For example, rtsp://192.168.3.111:8554/CH001.sdp

Note:

1. The RTSP streaming provides source video images of 352 x 240 / 352 x 288 only.
2. The RTSP server must be enabled on the Web interface. See Figure 4-15.
3. Only VLC and QuickTime players are supported for streaming video via RTSP protocol.

C. Settings for Internet Explorer 8 or later

If you use Internet Explorer 8 or later, it is required to complete the following setting.

1. Set the Security to **Medium-high (default)**.
2. Enable **Allow previously unused ActiveX controls to run without prompt**.
3. Disable **Only allow approved domains to use ActiveX without prompt**.